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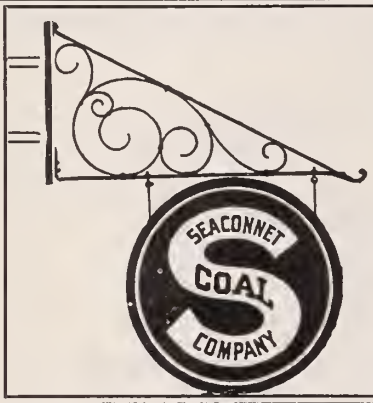
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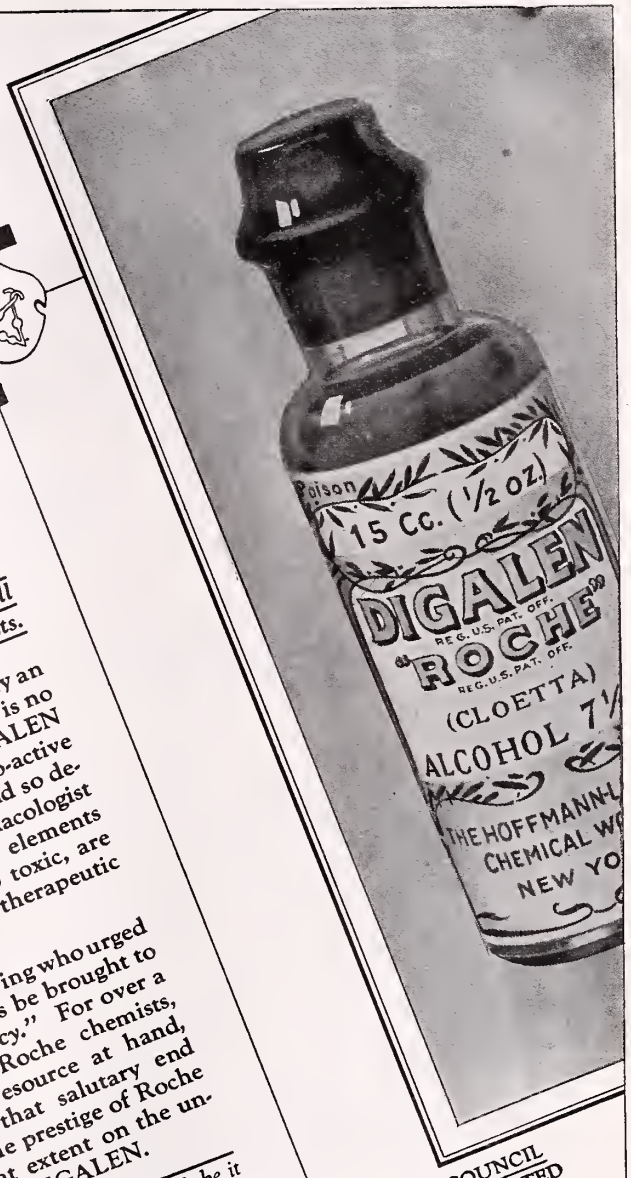
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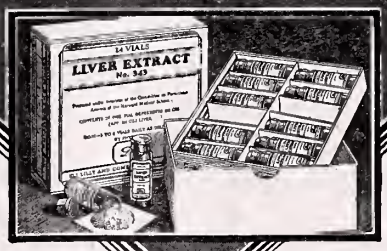
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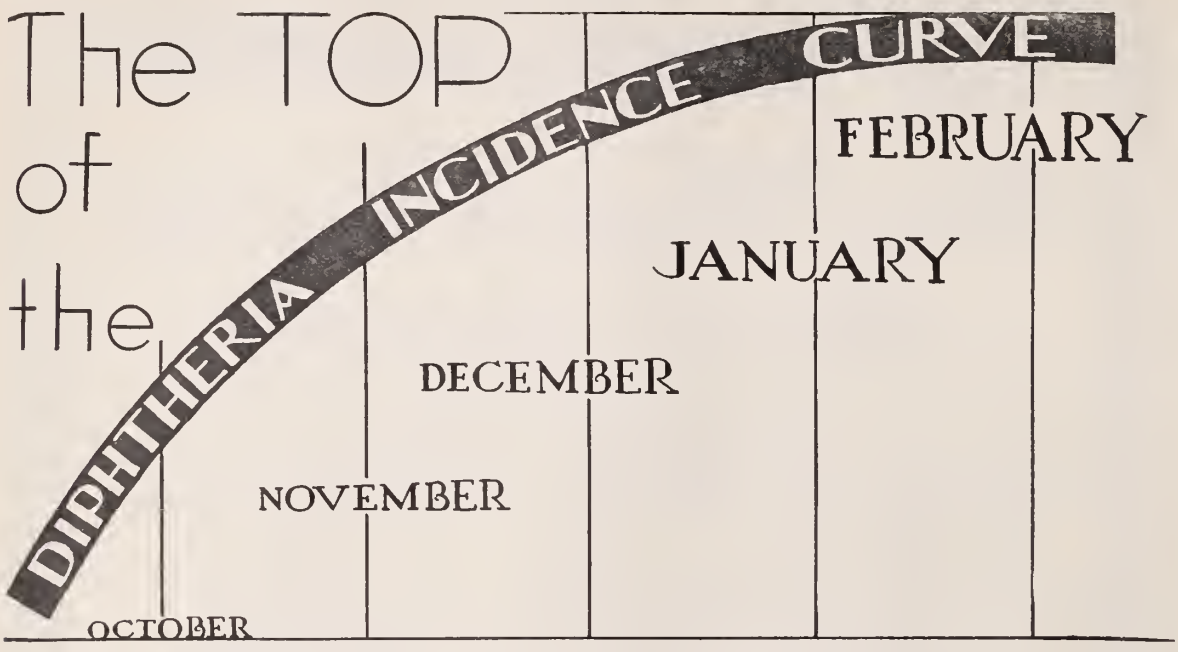
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ORIGINAL ARTICLES

THE UNDERLYING PRINCIPLES EMPLOYED IN THE ARTIFICIAL FEEDING OF INFANTS.

By Richard M. Smith, M.D.*

66 Commonwealth Ave.,

Boston, Mass.

The method of approach to the artificial feeding of infants has changed materially in recent years. This has been done, not so much to added knowledge gained directly from the study of the feeding of infants, as to the application of knowledge acquired through the study of the general problem of nutrition. We are now concerned with the amount and the kind of food which the infant receives in each twenty-four hours. Formerly, we thought in terms of the amount and the composition of the food given at individual feedings.

Metabolism measurements have indicated the essential requirements for growth, and the proportionate amount of food utilized for the satisfaction of basal requirements, for growth and for activity. It has also established the percentage loss in excreta.

Animal experimentation has indicated the necessity for considering the various food elements in total amount and in relation to one another. It has also demonstrated the fundamental nature of the vitamins and the necessity for providing an adequate supply of these substances.

Some of the knowledge which has resulted from these studies is new, but some of it has served merely to confirm on a scientific basis practices which have been in vogue formerly on an empirical basis.

In order to intelligently prescribe the food for babies who are not nursed by their mothers, we should be familiar with the facts with reference to food requirements. If we understand the principles which govern growth, the method of application of these principles may vary widely. If we try to learn a method and not study the principles that underly it, we may be successful by luck in a considerable number of cases, but we shall be quite unable to understand why one baby does well and another poorly, and we shall not be able to intelligently analyze the history of children who present nutritional disturbances.

The food requirements of the normal baby are measured in relation to weight for age, and the food is always considered on a twenty-four hour basis. We shall then have to familiarize ourselves with the qualitative and quantitative requirements. The food elements which are essential for growth are protein, fat, carbohydrate, salt, vitamin and water.

At the risk of boring you by the repetition of simple, well known facts, I wish to state briefly the function of each of these food elements, and the amount which is necessary for a growing infant in each twenty-four hours.

Protein is used to build the body structure, and when an excess is present beyond the amount needed for body building, it serves as fuel. Not all proteins are of equal value as body builders. It is, therefore, necessary to supply foods which are complete, that is, which have all the essential animo-acids. An infant requires approximately 1.5 grams of protein per pound per day. The average infant can be given safely considerably more than this, but if the tolerance for protein is greatly exceeded for any considerable period of time, fever and toxemia, not unlike those present in actute infection, may occur.

Fat and carbo-hydrate are the chief sources of fuel for the body, and within certain limits, these elements are inter-changeable for this function. Fat also is the vehicle for conveying one of the vitamins to the body. The average infant requires approximately 1.8 grams of fat per pound per day. If fat is given in great excess, diarrhea may develop, and ketosis follow. Carbohydrate, in addition to furnishing fuel, spares the burning of protein, and is essential for the complete com-

*Read before the Rhode Island Medical Society, June 7th, 1928.

bustion of fat. Lactose, the carbohydrate present in cows milk, is also the vehicle for conveying to the body one of the essential vitamins. Carbohydrate is the food upon which fermentative bacteria flourish with the production of peristalsis. The average infant utilizes from four to six grams of carbohydrate per pound per day.

The salts needed for infant growth are calcium phosphorous, magnesium, sodium, potassium, chloride and iron. It is difficult to state simply the salt requirements. It will perhaps be sufficient to say that except in tetany and rickets there is rarely any necessity for the consideration in the normal infant of salt requirements. It is important, however, to bear in mind that the usual methods of artificial feeding of infants will not furnish enough iron to supply the needs of the body. Other salts are furnished in sufficient amount so that none of them need to be added to the diet.

Vitamins A, B and C must be furnishd in sufficient amounts to present the development of the deficiency diseases. We must know what these diseases are, and the absence of which vitamin is responsible for the particular disease. Rickets is not really a deficiency disease, but since its development may depend upon a lack of certain elements in the food or certain factors in the environment, it should be considered at this time, and provision made to insure against its development.

Water should be provided in the amount of 2½ to 3 ounces per pound per day.

If we take all the food requirements together, we shall have a quantitative value which can be measured as calories. The average growing infant receives from 40 to 50 calories per pound per day. This will vary somewhat with age and activity. A younger infant requires somewhat more calories than an older one, and a more active infant requires more than a quiet one.

The usual food employed as the basis for the artificial feeding of infants is liquid cow's milk, and we may transfer our required measurements to ounces of cow's milk. If we use whole cow's milk dilutions, which are quite satisfactory in nearly all instances, it will be found that one and one-half ounces of whole cow's milk per pound per day, satisfies completely the protein and fat requirements. It satisfies a part of the carbohydrate, salt, vitamin, and fluid requirements. A considerable proportion of the total calories needed in the 24 hours will also be supplied by this amount of milk. It has been found by practical experience, that it is rarely safe to give over any considerable period of time more than two ounces of cow's milk per pound per day.

In order to satisfy completely all the food requirements of the infant, we must add in addition to the ounce and one-half to two ounces of whole milk more carbohydrate, iron, fluid, and certain vitamins in order to prevent the development of deficiency diseases. From practical experience, we know that it is unwise to add more than 1/3 of the total calories in the day's food supply as sugar. If this amount of sugar is added to the amount of milk already indicated, the caloric requirement has been met. We can then add enough water to complete the fluid requirement.

Iron can be given in the form of vegetables or fruits, or as in medicinal form.

Vitamins A and B are supplied in sufficient amount in the liquid cow's milk. Vitamin C, essential for the prevention of scurvy, is furnished by orange juice or some other fresh fruit. Rickets may be prevented by the addition of Cod Liver Oil, or by exposure to the natural suns rays or to the ultra violet lamp.

These principles furnish a very simple basis for the artificial feeding of infants. If they are thoroughly mastered and applied, most normal babies will develop satisfactorily, and without difficulty.

The baby who presents evidence of indigestion will, if his history is carefully analyzed and his physical examination carefully performed, be found to be suffering from one of three conditions, either wrong food, or incorrect method of handling, or infection. In babies who are properly fed from the beginning, disturbances of digestion are almost invariably due to infection. This point is frequently overlooked.

If we can familiarize ourselves with the principles underlying the artificial feeding of infants, the method to be employed is not so important, because any method which furnishes to the infant in each twenty-four hours his required amount of food of the proper kind, is a satisfactory method.

A PLEA FOR THE CROSS-EYED CHILD*

By J. F. Hawkins, M.D.
Providence, R. I.

Nearly ten years ago a paper with this title was read before the Pediatric section of this society. It has borne good fruit. It was paid the compliment of a long and thorough discussion. As far as known, its opponents were, or have been, won over to what at that time was regarded as very radical claims. The intervening years have added to the truth of the statements then made and many converts have come into the fold. What was denied as possible to accomplish at that time, even by oculists who opposed the views then presented, is not only now accepted by them, but in some instances is put forward as having been advocated by them, when as a matter of fact they are only now employing such methods of correction, as shall be mentioned later, because forced to do so by request or the demand of public opinion.

The splendid results of early correction of cross eyes in children are becoming so well known to their parents that he is indeed a courageous oculist who would now pooh-pooh the idea of early correction. And the general practitioner is of quite a different opinion also. Of that, more anon.

Notice the title of the paper, "A Plea for the Cross-eyed Child;" the child having no one to plead for it, an attempt to do so will be made here. Its parents or the doctor are the only ones to whom it may look for aid. The former have often been told by the latter, to wait. Seven years is the usual time specified. Just where the *seven* came from is laden with uncertainty. Was it Biblical? Did the seven lean years and the seven fat years have aught to do with it? Or was it more remote? The Medes and the Persians had many cycles of seven, and they carried them to India and China. Wherever its origin we know it did exist, and unfortunately still exists. But, thank goodness, to a less degree than formerly. It may be that the younger generation of "medicos" are not as much given to that sort of thing, or is it because they have had an opportunity to see the fallacy of it? The fact remains that there are many physicians today who still tell parents to do nothing about the crossed eyes of their children until they are seven years old, and if seen after the child is seven, then wait for the second cycle of seven, fourteen, or if they do not mention the magical, mystical seven, they advise waiting until the child "grows out of it."

Where they got that "grows out of it" idea is also deeply uncertain; for one may look in vain to find a case where he can ever recall having seen an unassisted recovery. Or, perchance, they assumed a spontaneous or unaided straightening when something like the following was what actually occurred.

A young man at law school in Boston, some years ago, was so deeply sensitive to the handicap under which he was living with one eye so far turned in that it looked as though he could look into his own nose, that, after saving some money out of his weekly allowances, went to an oculist of revered memory and stated his plight. The good old doctor did a tenotomy, under local anaesthesia, there in his office on the spot. (Don't tell me the old doctors aren't courageous.) The young man returned to his home, a city 70 or 80 miles distant, the following week end. To say his parents were astounded is putting it mildly. They hardly knew him. He saw very few of his town folk at this time, but did see them long after this incident. They are probably quoting it as one of those "grew out of it" cases. He is practicing law in Providence today. Many of you know him. I'll wager not one in a hundred can tell he ever *was* cross eyed.

In the vast majority of cases the cause of the squint is a loss of muscle balance, equilibrium, or fusion between the two eyes. Heredity plays its part. A muscle too long or too short. Many cases follow the spasms of whooping cough. Why? Surely no short or long muscle there. Or, was it there and managed to stay straight until the overload came? Most crossed eyes are hypermetropic eyes, far sighted eyes so called, a misnomer, but we will pass that at this time. But there is a remote, or primary cause. Not always pertussis, pyrexia, pyaemia, chorea, or the exanthemata, but many times directly associated with these, rightly or wrongly, by the parents.

Whatever the cause, the fact remains the child becomes cross eyed. What happens? Diplopia; double vision. And no matter how young, even

*Read before the Rhode Island Medical Society, June 7, 1928.

the infant, soon learns to tell the true from the false image. And also learns to suppress the false image. Then follows amblyopia ex anopsia (loss of vision from non use). The eye upon fundus examination may appear perfectly normal. Yes even years afterwards that fundus may show no pathology. But it is a blind eye. And it always will be a blind eye. Therefore the reason for the plea to have these cases seen early; seen before the eye ceases to function.

In the paper of ten years ago, referred to at the outset, it was stated that glasses were put upon children as young as 14 months old. There are infants in Providence today with glasses on, who are only four months old; if the glasses are removed as much fuss will be raised as when their bottle of milk is removed. The eyes of these children are straight under the glasses. Remove the glasses and the eye turns in at once. The eyes that will not stay straight, either with or without glasses, are the operative cases. Even in advanced cases or cases that come late, or in adult life, when the sight is gone, and there is no hope of return of vision, at least they can be made less unsightly. It is actually a temptation to walk up to a cross-eyed person on the street and tell them they need not go around through the community the rest of their lives in any such condition.

One would hardly be excused for being so solicitous, however, be it ever so desirable.

At one of our hospitals this incident occurred. A fine husky, healthy three-year-old was brought to the clinic by his mother because his right eye turned in. She was a rather unusual type of mother to see at the clinic these days, in that she accepted treatment and advice without resentment or comment. The youngster was refracted and glassed. Upon his return in two weeks his mother reported he was delighted with the glasses; wanted to wear them at all times and strenuously objected to their removal even when he was being put to bed.

Mistake not, this was because of the relief, and not that they were a new toy, because he never played with them. His eyes were straight. On removing the glasses the right eye turned in, over 30° within 10 seconds. Upon replacing the glasses the eye would return to its normal position. An assistant who was present told of his attempt to follow the preaching of his chief, only to find the family doctor had told the mother to do nothing about it; said it was of no account and the child would outgrow it, as it was only a temporary thing. Feeling that wasn't sufficient he had to have a "whang" at those who would give the child relief, so unburdened himself of this piece of antediluvian heresy, "And whatever you do, keep away from them damn specialists because they will surely put glasses on him."

This is not intended as a slam at the dear old family doctor, the general practitioner, as we of this society know him and his splendid worth and work. And when one has practised in that goodly company himself for many years, he is still less likely to offend, or have desire to do so.

It is used wholly in an attempt to get you to stop that sort of thing wherever you see and hear it. Whether it comes from your professional brethren or from a layman. The specialists are not putting glasses on children, or adults for that matter, who do not need them any more than that type of man is giving unnecessary medicine; perhaps not as much so.

How long must the glasses be left on? May be forever. What of it? Isn't it worth it? It is not such a high price to pay for what you get. Is it a cure? Certainly it is a cure. Just as much a cure as when a permanent bone plug or graft, *a la Albee*, is put in and left there forever and a day. If glasses can be left off later, it will be done.

If cases come to you late, even after that absurd waiting game has been tried, much may be done. Not always in the way of vision, but at least in appearance. At that time improvement is usually obtained by operation, rather than by glasses, or by both combined. And if you aid in that *desideratum*, you will have placed yourself in line for many heartfelt thanks through the years, from a grateful adult who can then realize what disfigurement you saved him, when as a child he had only you to look to for relief. Because parents, even in the best families, have not your medical knowledge and will have nothing done for the eyes of their children unless sanctioned, or encouraged, or even forced upon them in many cases, by their doctor.

Now as to where to send them:

Both the dispensary clinics and the school oculists are crowded with work, and these cases take much time and patience.

Unless it is an absolute charity case, call up your oculist, or send him a note, and arrange a time and fee, in cases where you think he should make a special price. You know the finances of the family, he does not. He will always be glad to meet the requirements of the case, just as you are. The fact he has become a specialist, hasn't changed his sentiment or emotions.

Although not coming under the title of the paper, a word should be said for the adult. It is surprising the number of cross-eyed people one sees on the street. It is a severe handicap when one is seeking employment, and it is a constant source of chagrin to the unfortunate possessor. As an illustration of what will be done for relief, the following case will serve as an example.

A girl of sixteen, in the Pawtucket High School, was so annoyed by her teasing companions calling her "Cock-Eye—Cock-Eye" that she was almost a nervous wreck. She got no sympathy, relief or encouragement at home and determined to do something for herself. Unfortunately for her, the hospital clinic to which she applied was manned by an oculist who did not give her the relief she sought and her first experience was most discouraging. Not giving up hope, however, she acquired and saved money of her own, by carrying dinner pails to the mill, and then announced to her parents she wanted to see a specialist, whom she could pay, and see if he wouldn't do something for her. This oculist agreed to operate (correction by glasses was out of the question at that stage) and didn't realize until long after the operation had been performed and the result all that the most exacting could expect; the source from whence came the money for his fee. Fortunately he did find out in time to "make the punishment fit the crime." This girl, like most of such cases, had a blind eye at that stage of the story; but as she had only one eye with which she could see anyway she lost nothing in vision and gained much in comfort and health.

A long and what would probably be only an annoyingly irritating list of case histories could be given to you. So also could a large number of photos showing "before and after taking." They are not necessary. You know and see them every day. They need no cataloguing, indexing or even reciting. You are familiar with such cases every day of your life. The contention is that not enough is being done for them. In this movement for the betterment of the condition of these unfortunates the family doctor has first place. It is true you can only advise and recommend. But it is a service you should render. And if you do render it, you will deserve and probably receive that splendid tribute "Well done thou good and faithful servant."

DIAGNOSIS AND TREATMENT OF TUBERCULOUS LARYNGITIS*

By Benjamin S. Sharp, M.D.
Providence, R. I.

Secondary infection of the larynx is a frequent complication in chronic cases of pulmonary tuberculosis. It occurs most frequently in advanced cases, but in patients with limited chest lesions, this affliction generally indicates a severe type of infection or a rather lessened degree of resistance. Many investigators hold the view that laryngeal lesions usually render the general prognosis rather grave. Approximately 30 to 40 per cent of all cases in institutions for tuberculosis show involvement of the larynx. Because of this frequent occurrence, we have endeavored for the past three years to examine all cases at Wallum Lake.

No condition responds more rapidly to properly given treatment than the tuberculous larynx, provided the diagnosis is made fairly early. Every patient with pulmonary tuberculosis should be considered a potential case for secondary development of laryngeal involvement.

Examination of the upper respiratory tract should be objective and regular routine laryngoscopies should be made in all suspicious cases before classical subjective symptoms such as huskiness of the voice, dryness, hoarseness, pain on swallowing and pain referred to the ear, develop.

We endeavor to give routine examinations of the larynx, with special reference to the posterior laryngeal wall, because this region is the most frequent as well as the first area to be infected. Infected sputum continually passes over this mucosa which is thrown into folds by actual move-

*Read before the quarterly meeting of the Rhode Island Medical Society, held at Wallum Lake, Sept. 6, 1928.

ment during phonation, respiration, coughing, and swallowing. It seems reasonable, therefore, that these crypts of the mucous membrane may become devitalized by constant irritation, so that the infected sputum, may in time, produce erosion of the mucous membrane or severe reaction such as hyperemia, edema, and infiltration. Frequently the surface epithelium breaks down and ulcerates and mixed infection ensues. The true vocal cords are susceptible to infection because of their anatomy. They are cartilaginous tissue covered with a thin layer of epithelium and these structures cannot stand the constant bombardment of bacilli for a long time without becoming damaged. Redness, thickening or edema of one or both cords may be seen early, then ulceration occurs and this condition produces a mouse bitten appearance or irregularity and later as the disease progresses tissue deformity and destruction takes place and the cords can never be repaired. The false cords are not involved as often as the true cords, however, we have seen several cases in the past three years that have shown tuberculoma in this region. As long as the tuberculoma is confined to the interarytenoid space, vocal cords or false cords, the prognosis is more favorable than in those cases where the arytenoids, epiglottis or the pharyngeal walls are infected. Early involvement of arytenoids and interarytenoid space may show only a beefy red appearance. In advanced stages, ulceration, infiltration and destruction can be plainly seen. The epiglottis frequently, pharynx occasionally, and tongue rarely, are involved in the disease. Lesions may appear as red, nodular swellings or dirty ulcerations.

We have found that certain early subjective symptoms are helpful in aiding us to make a diagnosis. Some of these complaints are, dryness and burning sensations in the throat and vague pains radiating from region of the thyroid to the ears and at times, patients complain from two to four weeks before a definite lesion can be made out with the laryngeal mirror. Some of the cases have definite signs of laryngeal involvement, such as tuberculoma of interarytenoid space and yet have no complaints, but as soon as the arytenoids or vocal cords are involved, there are many symptoms of distress. Infiltration and ulceration around the arytenoids and epiglottis cause much discomfort to the patient.

Laryngeal involvement is always secondary to pulmonary Tbc. condition, therefore, these patients should be treated in a sanatorium, as a carefully regulated plan of general treatment of the pulmonary lesion is quite necessary, and in this way, the clinician and the laryngologist are better able to get results for their patients.

Our plan of treatment of tuberculous laryngitis is as follows:

(1) Vocal rest for all patients who have definite signs in the larynx. Pad and pencil is given to the patient, and he is instructed to write everything, thus impressing him with the seriousness of his condition and also putting the larynx at rest.

(2) Treatment of the local lesion. The active treatment is the electric cautery. Therefore, all patients that show pathology of the arytenoid space, namely, tuberculoma, infiltration, ulceration or edema are considered suitable cases for cautery provided they are not running marked fever and not subject to frequent attacks of hemoptysis.

Cauterization is done under local anaesthesia and the direct method is used. Cauterization produces inflammatory reaction to the tissue with probable development of new blood vessels, giving this area nutrition and resistance. We even use the cautery in hopeless, far advanced cases as a palliative measure to relieve pain and coughing. Treatments are carried out regularly once a month until the patient is relieved or until the tuberculoma has disappeared.

In certain febrile cases with hemoptysis, and in far advanced cachectic cases, we employ various palliative drugs to allay the suffering of the patient. Some of these are; orthoform, chaulmoogra oil, antipyrine solution, cocain and adrenalin solution.

The Quartz Light treatment has not been of value to us. Many patients have had this treatment however; but a very few seem to benefit. Objectively, we have seen no change in the laryngeal lesion by this treatment, yet some cases seem to benefit psychically at least.

In concluding we wish to give a brief résumé of the patients treated with the cautery at Wallum Lake.

Twenty-six cases have been under treatment. Eighty-two cauterizations have been done, some cases receiving one, others as many as eleven treatments.

Twenty-one cases were improved as for as larynx and subjctive symptoms were concerned.

Five cases died but not from the laryngeal involvement.

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FREDERICK N. BROWN, M.D., *Editor*
309 Olney Street, Providence, R. I.

CREIGHTON W. SKELTON, M.D., *Business Manager*
166 Broad Street, Providence, R. I.

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G R E E T I N G S

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EDITORIALS

CIVIC SHAME

Sewage disposal is undoubtedly one of the important problems of the present day. All large cities seek its solution and municipal progress in this and other matters seems to be dependent upon the education and temper of the people and to bear directly upon the type of persons elected to public office. The interest of the public does not seem to have been particularly elicited in its behalf nor is there any urgent propaganda of education upon this branch of sanitation.

We might liken a municipality or township to a family well housed, with paved streets and walks, suitable plumbing, flowers in the garden, amusements,—radio and music offer improvements of the mind and cultural influences, food and clothing are good but expensive and there are the usual evidences of prosperity with more or less good taste,—but the water supply as it leaves the house is deposited in a stream close by and the pleasant purling brook that was a fragrant delight has become a filthy ditch.

There is in this commonwealth the somewhat unusual circumstance of a city and town evidently resenting the mandate of the state and showing such marked unwillingness to bring its sewage disposal equipment to any degree of efficiency and decency as to resist legal proceedings. In other words the above mentioned family upon being asked to properly care for its refuse, refuses to do so and shields itself behind the scriptural sarcasm "He that is filthy let him be filthy still." It must be that any such view of a government, any failure to bring its charge up to a higher standard of hygiene, resistance to the orders of a properly appointed and able Commission,—is due in part at least to its inappreciation of the importance of health and municipal problems, a lack of foresight in city planning and perhaps of adequate representation of the matter to it. We wonder if a campaign of instruction properly backed up by suitable literature and informing interviews with city and state boards of health would so persuade recalcitrant authorities that they would be more inclined to favor and assist what is a tremendously needed public improvement.

FOR SALE—HEALTH AND LONG LIFE—THE "HEALTH BUREAU"

In a recent issue (Editorial—December, 1928) attention was called to a convincing expression of the opinion that on the whole the so called "Health Audits" are of doubtful value at best and often do much positive harm by focussing the attention of a relatively normal person on insignificant abnormalities, while failing to predict adequately any real breakdown of vital functions. Furthermore some time ago under the heading "Health Examinations" (Editorial—June, 1925) the JOURNAL discussed the work of various organizations, "institutes" or "bureaus" which attempt to furnish periodic examinations, laboratory tests and so forth, with a view to helping their clients prolong their lives. It was pointed out that such institutes are bound to lose that personal touch and insight which is so important in interpreting to the patient the physical findings which have been discovered and in advising him accordingly as to his mode of life. With elaborate offices and equipment and all the evidences of "business organization" such an institute represents a spirit far removed from the sympathetic understanding of the family physician. Nor can it offer the patient any facilities not already at his disposal through the agency of his own doctor. Furthermore such institutes while attempting to offer services at a low cost are open to criticism on two important points: first, being essentially "business" institutions they must have rigid prices and can make no move to help the needy and unfortunate; and second, they employ doctors at a starvation wage to do their work for them. Such doctors receive absurdly low compensation for what they do and a large part of the fee which the patient pays goes for the overhead expenses, the cumbersome organization and the officials who must make their living from the business.

This subject is of especial interest to Rhode Island physicians because at the present time a "bureau" of this type is being established in Providence. Elaborate offices have been engaged and it is to be announced as a "Scientific Bureau, organized as a humanitarian, *semi-philanthropic* organization upon a business basis." The JOURNAL believes that the establishment of such a business concern whose avowed intention is to under-

take work which is now far better performed by the medical men of the state is unwarranted and that the Rhode Island doctor who chooses to practice under the direction of the self appointed officials of such a concern is, to say the very least, unwise.

MENTAL DEVELOPMENT OF CHILDREN

One of the real contributions that the mental hygiene movement has made is in the better understanding of the mind of the child. It is perfectly true that "being a parent is the hardest job in the world" and it is often an occasion for wonder that more children do not develop into anti-social beings.

While the early years of childhood are full of potentialities in the mental life of the child, it would seem that the extremists of the behavioristic school are too radical in suggesting that the first two years practically determine the future mental equipment of the person. On the one hand this would be most comforting to some who have undesirable mental traits, for they could blame their actions on their parents or on the ones who guided their destinies during these years. On the other hand, how tragic it would be to some who recognize their shortcomings and realized the impossibility of change.

It seems much more rational to agree that there exists in children certain characteristics that can be used properly to develop a normal personality, but are often abused to produce an abnormal personality. These characteristics are imitativeness, love of approbation, plasticity and suggestibility. When these are recognized by wise parents and the proper environment for their normal expression is afforded, the child is given a mental equipment that will go far toward meeting and conquering the joys and the adversities of later life.

THE EFFECT OF DENTAL PATHOLOGY UPON THE EYE AND EAR*

Lewis B. Porter, M.D.

As a part of our present day activities, complete physical examinations are called for. Such an examination is not complete without an investigation of the teeth, and often not without an X-Ray picture. Since 1912, when Billings wrote his epoch making paper on focal infections, and Rosenow, in 1915, on the "Elective Localization of Streptococci," the teeth have gained preeminence as foci of infection. The role played by the teeth is especially large in ocular focal infection, probably because pyogenic organisms associated with bone necrosis have been observed to be very virulent. Recently Byers of Montreal, in an analysis of eighty cases of iridocyclitis, found, after eliminating syphilis and tuberculosis as causing twenty-two, that of the remaining, forty-three were due to focal infection, of which, twenty-six were caused by the teeth, a percentage of 53.75 per cent., while the ears were responsible for 1, sinuses 3, tonsils 6, gall bladder 1, intestines 1, G. U. tract 5.

In Irons' and Brown's investigations of the "Recurrence of Iritis as Influenced by the Removal of Infections," based on a study of fifty cases followed for three to twelve years, the probable source of the infection was found in forty-six of these cases. Tonsillar infections were found in 34 per cent.; dental, 20 per cent.; sinuses in 2 per cent.; teeth and tonsils combined in 10 per cent. Elschnig reports twelve cases of iridocyclitis in twenty-eight due to dental infections.

De Schweinitz says that most of the ocular structures are liable to focal infections, most frequently the uveal tract, less frequently the cornea and sclera, undoubtedly the optic nerve, and even the retina and its circulation. Dental infections are especially responsible for systemic disease of focal origin occurring after middle age.

Benedict, in a Mayo clinic report, gives the following modes of transmission from the teeth to the eye:

(1) Direct transmission through bones. The tooth socket becomes the seat of an infection that destroys the bone of the upper jaw, and through that, directly affecting the orbital walls, finally producing an orbital cellulitis or retrobulbar neuritis.

(2) Direct extension of the process along the periosteum to the malar bone, invading the orbit

*Read at a joint meeting of the R. I. Ophthalmological and Otological Society and the R. I. Dental Society, April 12th, 1928.

and giving rise to processes similar to those mentioned.

(3) Transfer of organisms from the focus at the tooth to the eye by the blood stream. This is the most frequent means of transfer of infection from the teeth to the eye, and is the most important. L. Webster Fox believes that inflammation or irritation of the fifth nerve by dental affections causes reflex disturbance. Such a condition I have observed in a patient with a paralysis of accommodation and mydriasis which was quickly restored after the extraction of an abscessed tooth. Benedict says the iris and choroid are more often attacked by organisms from apical infections and less often cause optic neuritis, scleritis, keratitis, and conjuctivitis. This mignt be extended to include retinal hemorrhages and various functional disturbances, as asthenopias, insufficient accommodation, and convergance.

In the search for foci of infection in scleritis, Benedict finds peridental infections the most common. Iritis, cyclitis and choroiditis have been produced in animals by injection of bacteria grown from peridental abscesses of persons having an acute attack of these diseases.

Knapp says that chronic septic foci frequently exert a baneful influence on eyes that have recently been operated on. Various grades of iridocyclitis developed in the second week following uneventful cataract extraction have been apparently due to tooth infections.

Retrobulbar neuritis during the past few years has had much attention given to it, largely through the work of Leon White. Until recently he believed infection in the sphenoid sinus and adjacent post ethmoid cells with a small optic foramen was responsible for this condition. He now believes the sinuses are but rarely infected, and finds it unnecessary to open them except in a few desperate cases. The removal of infections in the tonsils and teeth, and less frequently, from other sources, give the best results. Devitalized teeth should especially be studied. A definite focus was found in fifty-three of the sixty unreported cases. The tonsils were the only focus in seventeen; the teeth in fourteen; antrum in five. The teeth and tonsils, alone or combined, are considered to be a focus in seventy per cent. In six cases the ethmoids were involved, but in these there were also infected teeth, tonsils or antrum. The frontals and sphenoids were involved twice. He believes the infection travels by way of the blood stream, and produces a neuritis of the optic nerve. Eliminate the infection of the blood stream and the neuritis subsides. Corneal ulcer has been frequently reported due to carious teeth and pyorrhoea.

Of the cranial nerves, the second and eighth, seem peculiarly susceptible to toxic substances. This is equally true of those of endogenous as well as those of exogenous origin. When due to advanced periapical abscesses, the removal of the tooth is not always sufficient, as the diseased bone in the tooth socket remains a focus of infection.

The auditory nerve is occasionally involved in a toxic neuritis affecting the vestibular or the cochlear branch or both. If unilateral, focal infection is first to be thought of. A man of thirty-five years of age consulted me a few years ago because of vertigo and sudden loss of hearing in the left ear. Functional tests showed this to be a nerve form of deafness. His tonsils were badly infected, and were removed within a few days. Weeks passed, and the paroxyms of vertigo and deafness recurred with an additional loss of hearing with each attack. Attention was then directed to the teeth with complete cessation of the vertigo and improved hearing following the removal of two or three teeth. The literature contains reports of many such cases.

Reflex otalgias are occasionally seen. There is a sharp stabbing pain in and about the ear. The drum is uninflamed and may look quite normal, likewise the functional hearing tests may be normal. An examination of the teeth or an X-Ray picture will often account for the pain. Though not a focal infection, I wish to refer to the impacted tooth, frequently with deep seated pain in the ear, shooting to temple or back of the ear. The pain is never manifested at the point of the impaction, but elsewhere, and is located in some other branch of the trigeminus, but may be shown by reflex pain or disturbance in some other part of the body. Stucky reports a case of iridocyclitis due to an irritation from an impacted tooth.

I am not aware of any procedure that can assure us that a pulpness tooth is free of infection and not disseminating bacteria and poison to other parts of the body. Such teeth I look upon with

grave suspicion. Hayden says, "There is much difference of opinion concerning the disposition of pulpless teeth which do not show radio graphic findings characteristic of infections. Bacteriologic studies have shown there is little difference in the frequency of infection in the two groups. If the removal of all possible foci is indicated, no pulpless teeth should be allowed to remain. In acute exacerbations, lymph nodes in the floor of the mouth are often swollen and tender on palpation in carious teeth and apical infections. The following case of Benedict quoted by Tivnen I should like to give to you: The case is of a man who suffered from recurring attacks of iritis during a period of six years; the attacks were always preceded by soreness of a right upper bicuspid, which came on about three days before the eye became inflamed, physical findings otherwise negative; the tooth referred to gave no roentgenologic evidence of apical infection, and an electric test showed the pulp was vital. The tooth was extracted and a culture was taken from the pulp, which, when injected into the blood stream of a rabbit, produced a hemorrhagic iritis in both eyes within a few hours, a subculture of this strain of organism produced a pericorneal injection in four hours, which entirely subsided in twelve hours. Here we have a tooth that roentgenographically is negative, but bacteriologically is a virulent infection. It is with chagrin that we occasionally find a patient with all teeth removed and still complaining of some ailment for which the teeth were removed. Such instances have tended to discredit the importance of dental focal infections. In the presence of symptoms of focal infections, the pulpless tooth should be looked upon with suspicion; roentgenographically it may be negative, but bacteriologically it may be infected, and this only can be determined after extraction. I regret to say there is a large percentage of dentists who do not fully appreciate the importance of dental infection to ill health. Some feel they have saved a tooth for their patient, only to have a fellow dentist later do the extraction. With a careful history and painstaking examination of the patient in co-operation with a dentist, not too wilful in his endeavor to save a diseased tooth, I believe we will succeed in giving the greatest benefit to our patient.

SOCIETIES

RHODE ISLAND MEDICAL SOCIETY

The regular meeting of the Council was called to order at 4:30 P. M. today at the Medical Library, the President, Dr. A. H. Harrington, presiding.

The application of Dr. Arthur Hollingworth for reinstatement into membership of the Society was received, and on notion of Dr. Mowry, seconded by Dr. Mathews it was voted unanimously to reinstate Dr. Hollingworth.

The Treasurer's Budget was presented by Dr. Jesse E. Mowry as follows:

BUDGET, 1929

Collation and Annual Dinner	$650.00
Expenses of Secretary (Sec. hire)	75.00
Delegate to American Medical Association	100.00
Printing and Postage	125.00
Fuel	600.00
Gas	50.00
Electricity	75.00
Telephone	95.00
City Water	10.00
House Supplies and Expenses	400.00
House Repairs	500.00
Janitor	600.00
Books and Journals (Including Ely Fund $74.00)	100.00
R. I. Medical Journal	400.00
Safe Deposit	5.00
Delegates New England Medical Council	150.00
Librarian	1,660.00
	$5,595.00

INCOME FOR 1929

Annual Dues	$4,160.00
Interest from Harris Fund	290.00
Interest from Ely Fund	74.00
Interest from Frank L. Day Fund	135.00
Interest from Herbert Terry Fund	100.00
Providence Medical Association	450.00
Use of Building	125.00
From Journal	400.00
	$5,734.00
Balance in Bank Nov. 1, 1928	$1,614.01

HARRIS FUND

Southern Illinois Light & Power Co.	120.00
Pacific Gas & Electric Co.	60.00
Mort. Security Corp. of America	110.00
	$290.00

J. W. C. ELY FUND

Southern California Edison Co.	$50.00
Mechanics National Bank	24.00
	$74.00

FRANK L. DAY FUND

Canadian National Railway	$135.00

HERBERT TERRY FUND

Missouri Public Service Co.	$100.00

On motion of Dr. Richardson, seconded by Dr. Mathews it was voted that the Treasurer's Budget be accepted and referred to the House of Delegates with the recommendation to adopt it.

Dr. F. E. Croghan being in arrears for dues for the years 1925 and 1928 inclusive and having received the customary 90 days' notice was by vote of the Council dropped for non-payment of dues.

Dr. Richardson called attention to the contemplated Health and Hospital Survey of Providence which will probably be conducted by the American Public Health Association. This survey will be purely a fact-finding investigation for the purpose of evaluating the amount of charitable work now being done by the various charitable organizations and hospitals. Dr. Mowry introduced the following resolution which was seconded by Dr. Mathews:

"Resolved—the Rhode Island Medical Society is in sympathy with the action of the American Public Health Association in making a Health and Hospital Survey of Providence as proposed by the Council of Social Agencies of Providence.

It was so voted and referred to the House of Delegates.

Adjourned.

DR. J. W. LEECH, *Secretary*

NOVEMBER 21, 1928

The regular meeting of the House of Delegates was held today at 5 P. M. at the Medical Library, the President, Dr. A. H. Harrington, presiding.

The report of the Council meeting held just before this meeting was made by the secretary, and all the recommendations of the Council were approved by the vote of the House of Delegates.

On motion of Dr. Mowry, seconded by Dr. DeWolf it was voted to fix the annual dues of the Society at $10.00 per year for the coming year.

Adjourned.

J. W. LEECH, *Secretary*

PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Edward S. Brackett, Monday evening, November 5, 1928 at 8:45 o'clock. The records of the last meeting were read and approved. The president appointed for an obituary committee for Dr. Davenport, Dr. Charles V. Chapin, Dr. J. M. Peters, and Dr. Halsey DeWolf. The president appointed for an advisory committee for the District Nursing Association a committee of seven authorized by the meeting as follows:

Dr. D. L. Richardson
Dr. John I. Pinckney
Dr. W. P. Buffum, Jr.
Dr. J. Joseph Hoey
Dr. Harold Libby
Dr. Joseph L. Belliotti
Dr. Carl R. Gross

The first paper of the evening on Spinal Anesthesia by Drs. Meyer Saklad and Eliot A. Shaw was read by Dr. Saklad. He first spoke on the physiology of the nervous innervation showing that pain is abolished, muscular action prevented and blood vessels dilated in the splanchnic area. Thus the higher the anesthesia the more vessels dilated and the greater the fall in blood pressure which is the source of danger. The Trendelenburg position and the use of ephedrine as a vaso constrictor combat this danger. A description of the different techniques was given. Also a series of their cases. Relaxation is marked with this method. The paper was discussed by Dr. Shaw who described Pitkin's method and its indications. In this method a viscid solution of specific gravity less than the spinal fluid is used

and with Trendelenberg position of varying degrees the height of anesthesia can be regulated. The usual length of anesthesia is from one hour to one and one-half hours. The blood pressure should be carefully watched throughout the operation. Salt solution intravenously is the best method to combat dangerously low pressure and oxygen and carbon dioxide for respiratory embarrassment.

The second paper of the evening on "Placenta Praevia" was read by Dr. John G. Walsh. This was phased on 149 cases at the Providence Lying-In Hospital. It is most common in multiparae, the ratio being 1 to 5. Hemorrhage in the last third of pregnancy without pain is usually due to this. Six and eight hundreds per cent maternal mortality occurred in this series usually from hemorrhage. Fetal mortality is 20 to 80% in different series. In this series it was 50%. Treatment should usually be instituted early. Version and extraction in this series had a very high incidence of maternal and foetal deaths. All such cases should be sent to hospital without examination. Caesarian section is apparently a valuable method but there can be no standardized method.

The discussion was opened by Dr. Fred. C. Irving of the Harvard Medical School. He said that diagnosis was of great importance and this can be made only by examination which should be done with preparation for immediate action of any extent. The safest method for the mother is a Braxton Hicks version bringing down a foot and leaving the remaining delivery to nature but this gives a large fetal mortality. They usually use a bag when the child is visible. In favorable cases Caesarian section seems the best. Dr. Foster S. Kellogg of the Boston Lying-In Hospital continued. He felt that in average hands central and partial cases were best delivered by Caesarian section. Discussion was continued by Dr. Appleton, Dr. Partridge, Dr. Brackett and Dr. Walsh.

Meeting adjourned at 11:10 P. M.

Attendance 112.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE
Secretary

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Edward S. Brackett, Monday evening, December 3, 1928, at 8:55 o'clock. The records of the last meeting were read and approved.

The Standing Committee having approved their applications, the following were elected to membership: Robert Connery O'Neil, Herman Paul Grossman. The nominations by the Standing Committee for officers and committees for the ensuing year were called to the attention of the meeting, and as Dr. Halsey DeWolf was already a councillor of the Rhode Island Medical Society, Dr. Albert H. Miller's name was substituted. Dr. Charles V. Chapin read an appreciation of Dr. James H. Davenport. The secretary mentioned a letter from the American Mail Line asking for the names of doctors who would attend the next A. M. A. Convention. He offered to send on any names given him. A letter from the secretary of the Rhode Island Medical Society regarding a Health and Hospital Survey of Providence by the American Public Health Association was read. This was explained by Dr. Arthur H. Harrington, and on the motion of Dr. Arthur H. Ruggles it was voted that this Survey be approved by the Providence Medical Association.

The first paper in a Symposium on Peptic Ulcer was Gastric and Duodenal Ulcer, clinically considered by Dr. Louis M. Gompertz, Assistant Clinical Professor of Gastroenterology, Yale University. Diagnosis is the first and important phase, and much has been done as to this. Etiology is still theoretical, and must be ignored in treatment. History is very important, but often baffling; physical examination is often negative, examination of stomach contents is unreliable, and even X-Ray examination is not conclusive. Ulcer can be acute, subacute or chronic. The duodenum is considered to be the most common site. Obstructing ulcer at the pylorus is an indication for surgery. Numerous dietic methods exist, and all of these have value, all including mental and physical rest. He outlined his usual treatments. During the periods when he gives nothing by mouth, he gives glucose by rectum. Two typical cases were presented. A number of interesting slides were shown.

The second paper by Dr. Theodore S. Moise, Assistant Professor of Surgery at Yale, was on Surgical Aspects of Gastric and Duodenal Ulcers.

Treatment is a combined medical and surgical problem, and operation is only an incident. Most surgical cases are late stages of treatment. He demonstrated a method of gastro-intrastomy done by him in which he used transverse incision of the jejunum. This obviates a valve formation at the stoma sometimes seen in the standard method with longitudinal incision of the jejunum. He then discussed the different types of operation for peptic ulcers.

These papers were discussed by Drs. Clinton S. Westcott, Chas. O. Cooke, H. L. C. Weyler, Alex M. Burgess, Herman C. Pitts, S. Morein, E. M. Porter, Gompertz, and Moise.

Meeting adjourned at 11:15 P. M. Collation was served.

Respectfully submitted,
PETER PINEO CHASE,
Secretary.

THE NURSES INSTITUTE

The first Institute of the Rhode Island League of Nursing Education was opened on Thursday afternoon, November 8, 1928, by its President, Miss Grace Breadon, with a short introduction and the first session was then presided over by Miss Helen O. Potter, Superintendent of Nurses, Rhode Island Hospital, Providence, R. I.

"Ward Teaching and Supervision" was the topic of a paper presented by Miss Blanche E. Edwards, Director of Supervision, Bellevue Hospital, New York City. Miss Edwards suggested that the more descriptive title, "Ward Instructor" be given the head nurse who, because of her intimate contact with patients and nurses, is the person best situated to carry on ward instruction. Her own work will prove more interesting and stimulating as she considers it from this standpoint, and under the guidance of the teaching supervisor of the department a better correlation between the students' theoretical and practical experience can be worked out.

Professor Bancroft Beatley, of the Department of Education, Harvard University, demonstrated the points in his discussion of "Motivation as an Aid in Teaching" in a manner that held the attention and interest of his audience. Upon the teacher he placed the responsibility of changing a neutral attitude on the part of the pupils to that of whole hearted interest and gave many practical suggestions for doing this. Among them were: appeal to common interests, to the senses, to a sense of humor, and the use of muscular activity.

Further practical suggestions for the teacher were presented by Miss Caroline E. Stackpole, Instructor of Biology, Columbia University, New York City, assisted by Miss Angeline Polley, Theoretical Instructor, Homeopathic Hospital, Providence, R. I., in a "Demonstration of Material for Science Teaching." Miss Stackpole urged the use of meagre directions, simple problems, and ample time for students' laboratory work that they might learn how to "find out" rather than just amass facts. She gave other helpful suggestions for teaching Anatomy and Physiology, such as, combining the two courses in one; having the bones of the skeleton colored brightly with the name printed on each; using very much larger charts with details clearer. Miss Polley, aided by her students, showed the audience samples of charts, laboratory instruments, and materials including the "living" or "recently living."

The evening session, with Miss Mary S. Gardner, Director of the Providence District Nursing Association, presiding, was made notable by the presence of Dr. May Ayers Burgess, Director of the Committee on Grading of Nursing Schools, New York City, and Dean Annie W. Goodrich, of the Yale University School of Nursing.

Dr. Burgess gave a talk on the subject of her recent book "Nurses, Patients, and Pocketbooks" and in a clear, concise manner showed the serious situation in which the nursing profession is placed today. The astounding increase in the number of schools of nursing and graduate nurses, out of proportion to increase in population, not associated with corresponding rise in educational prerequisites and unequal distribution of graduates, bringing about many unsatisfactory results. She urged concerted action that standards might be raised and the present over production checked.

Dean Goodrich, speaking on the "Growth and Expansion of Nursing Education," showed that whereas nurses are faced with this serious problem, nevertheless the fact that the study is being made and considered is itself an encouragement

in that it indicates the scientific methods which the profession is adopting. The profession has grown rapidly, accomplished much, and has a "glorious destiny" as an economic asset thru prevention of mental and phyisical ills, and as a factor in promoting better international relations thru service to humanity.

FRIDAY'S SESSION

The Educational Institute of the Rhode Island League of Nursing came to order on Friday, November 9th, at 2 P. M. with Miss Ellen M. Selby, Superintendent of Pawtucket Memorial Hospital presiding and introducing the speakers of the afternoon.

The first speaker was Mrs. Francis G. Allinson of this city, President of the Plantations Club. Her subject was "The Nurse of the New Century." She said in part that nurses should firmly believe in their destiny which serves as a basis for working out our problems. The modern trend of education is sweeping over the country and business people are demanding a high school education of their lowest salaried employees. Success comes from technic plus the personality to go with the job.

The second speaker was Miss Mary S. Gardner, Director of the Providence Visiting Nurses Association. Her topic was, "The Public Health Nurse's Job and How to Prepare Her for It." She gave a brief history of the Public Health Movement, dividing it in stages of segregation, sanitation and education.

She also discussed the requirements for the nurse in the public health field, and the possibilities of undergraduate training for it through affiliations with local visiting nurse associations. In addition to the usual requirements for all nursing work, the public health field demands an ability to teach, an understanding of community health and a social and co-operative view point not needed to the same extent in other forms of nursing. Postgraduate courses are offered in various parts of the country but only a limited number of nurses are able to avail themselves of these. Miss Gardner urged a getting together of superintendents of training schools and public health nursing groups, to the end of a better understanding of the educational problems of both.

The final speaker was Miss Emma Collins of the Brooklyn Nurses Official Registry. Her address was, "The Co-operative Movement Among Nurses, which is Called the Official Registry."

A clear picture of the needs of a city community was presented and the various ways in which the nurses registering for Private Duty meet this need.

The afternoon session closed with this address.

The evening session opened at 8 o'clock, with Miss Winifred Fitzpatrick, Associate Director of Providence Visiting Nurses Association, presiding.

The first speaker, Dr. Arthur Ruggles, Superintendent of Butler Hospital, Providence, spoke of the different attitude which the public maintains in respect to persons mentally ill; that Child Guidance Clinics are of recent origin; of the recent creation of the American Foundation for Mental Health. He said that every sick person has a psychiatric situation to be met, also that each person reacts differently to the same situation and illustrated this with the story of an industrial worker. The Industrial Nurse looks for the underlying causes in these situations. He emphasized the need of every nurse to have training in the care of mentally ill persons. In the past, a nervous breakdown was considered fashionable. Why not acknowledge mental illness and care for it as such?

The final speaker of the Institute was Dr. D. H. Kulp 2nd, Professor of Sociology, Teachers College, Columbia University, New York City.

His question was: What does Sociology say to nurses? Do not talk to nurses in general terms but be specific. There is not *the* nurse but *a* nurse. The approach to socio-analysis is practical. Find the common denominator in the field in which the nurse finds herself and approach the situation with this in mind. In finding this factor, the study of the person is made not from a personal angle but in his group interrelationships and culture. Personality is the result of experience which in turn is the outgrowth of heredity and culture. Think of a patient as a person who is a member of a group.

In concluding the Institute, Miss Fitzpatrick voiced the opinion of all present that it had been an inspiring success and thanked the many persons who had contributed so generously of their time and ability.

ANNOUNCEMENT

Dr. C. N. Raymond, a member of the Rhode Island Medical Society, announces his removal from 147 Reservoir Ave., to 320 Wadsworth Ave., New York City.

Dr. Raymond was married July 17th, 1928 to Miss Helen May Larkin.

(The *Journal* takes occasion to extend its congratulations and best wishes to Dr. and Mrs. Raymond.)

MISCELLANEOUS

COMMUNICABLE DISEASES IN LARGE CITIES

Some time ago the Institute of Medicine of Chicago appointed a committee of representative clinical and hygienic experts to make a survey of the communicable disease situation in Chicago. Their report,[1] recently published, deserves careful study. During 1926, one of the three years taken into consideration, more than 7,600 deaths from contagious diseases were reported in Chicago. This gives some idea of the significance of the task and the desirability of the investigation. It permits a forecast of 40,000 cases annually of the eighteen diseases selected for consideration. The numbers for the individual disorders show declining trends for all except chickenpox, measles and German measles; similarly there are declining tendencies in the death reports for the several communicable diseases, excepting encephalitis, chickenpox and smallpox.

Out of this document, necessarily statistical in large measure, certain conclusions of its authors deserve the attention of a wider audience than that of the municipality for which they were primarily considered. The commission adds its recognition of the proved value of immunization by toxin-antitoxin in the control of diphtheria—a practice that now has administrative sanction in many large American cities. It is pointed out that the ideal time for immunization against diphtheria is from the first to the fifth years of life. This is the preschool period, during which it is notably difficult to reach the children; hence efforts should be directed here quite as much as to the early years of school. Measles prophylaxis has its pressing problems, as has already been pointed out in The Journal.[2] The Chicago experts suggest that, pending the outcome of conclusive studies, a moderate supply of measles convalescent serum be secured and made available for use by institutions and practicing physicians in the treatment of selected persons who have been exposed to measles. Active immunization against scarlet fever cannot yet be recommended as a general public health measure, principally on account of the large number of injections required and the short duration of the immunity afforded. As a prophylactic in special circumstances, particularly where scarlet fever exists, its value is unquestioned.

The Chicago report reflects the changing conditions shown in the annual reports in The Journal on the incidence of typhoid. It reminds us that the advisability of general immunization in a civil population depends on the prevalence of typhoid in the community in question. In Chicago, with a morbidity of only 5 per hundred thousand, general immunization of patients of even the more susceptible age group would, to quote the report, "necessarily pay a small return on the investment." Thus have sanitary science and preventive medicine progressed in the attack on a once formidable malady.

Two practical suggestions deserve widespread emphasis. One of them urges that physicians in practice should assume their rightful share of responsibility in the community for the control of communicable diseases, especially in the preschool group of children, and make special efforts to secure immunization of their patients against smallpox and diphtheria before they reach school age. The other advice is that all hospitals should provide facilities for the care of patients with communicable disease. All hospitals, in the words of the Chicago report, should be expected to provide facilities for the care of those who contract or develop a communicable disease while under observation or treatment for other ailments. Hospitals must recognize that they have moral as well as financial obligations in these matters, however much they may object to retaining patients with communicable diseases because of the expense of the special nursing care required by existing regulations of quarantine.—*Jour. A. M. A.*, Nov. 10, 1928.

1. Gerstley, J. R.; Geiger, J. C.; Falk, I. S.; Abt, I. A.; Grulee, C. G., and Norton, J. F.: Survey of the Communicable Disease Situation in Chicago, *Am. J. Dis. Child.* 35: 1048 (June) 1928.

2. The Prevention and Modification of Measles, editorial, *J. A. M. A.* 91: 803 (Sept. 15) 1928.



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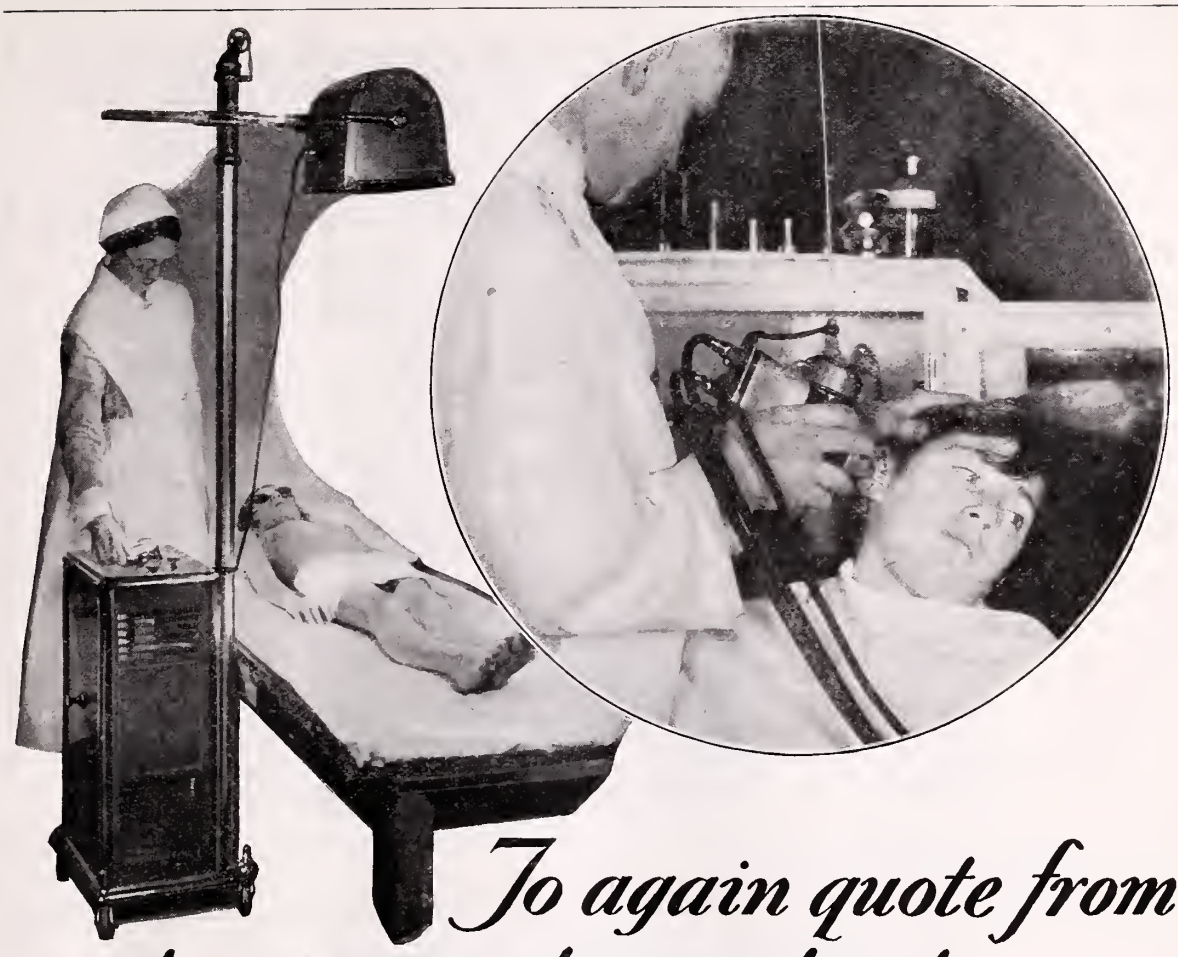
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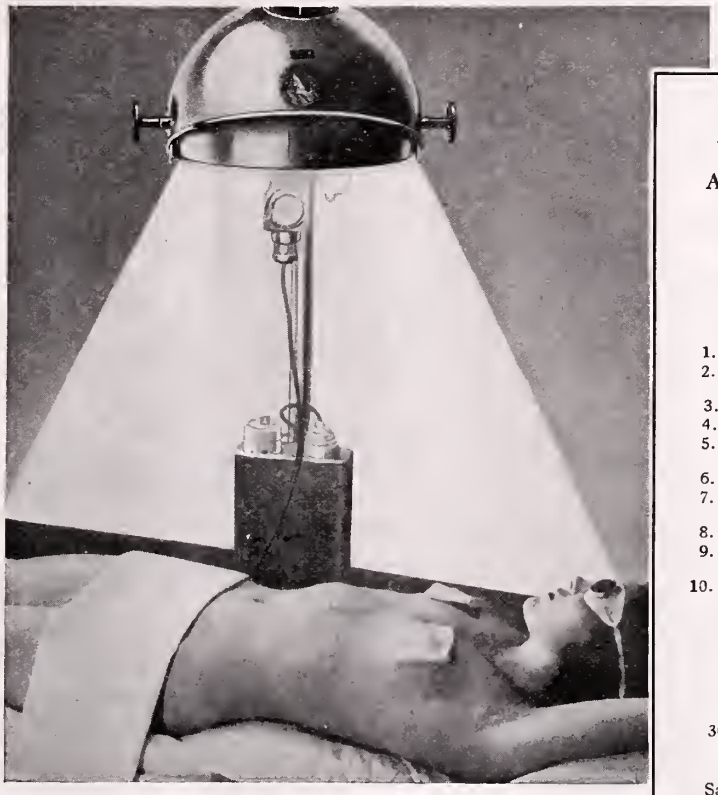
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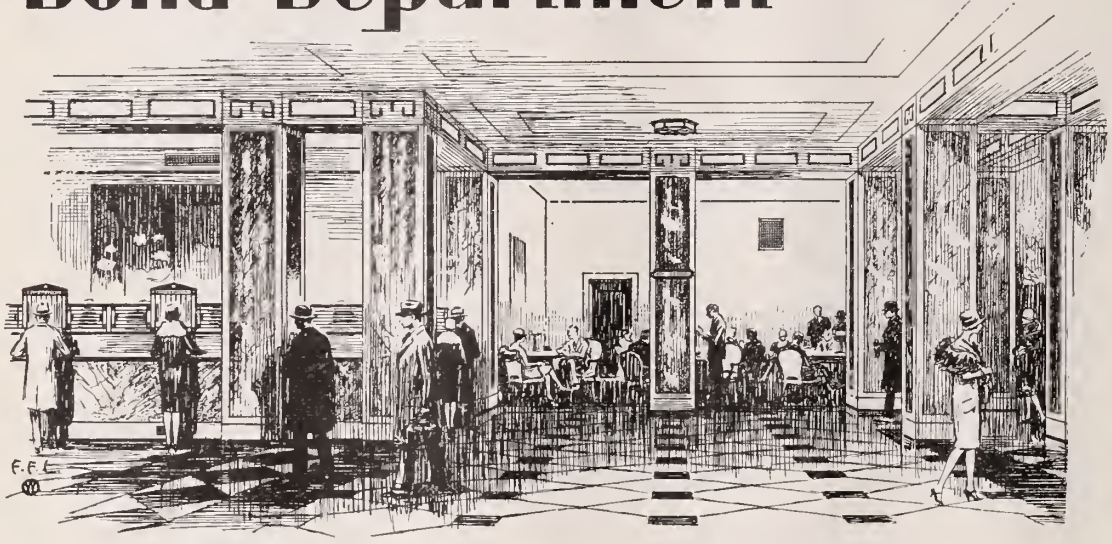
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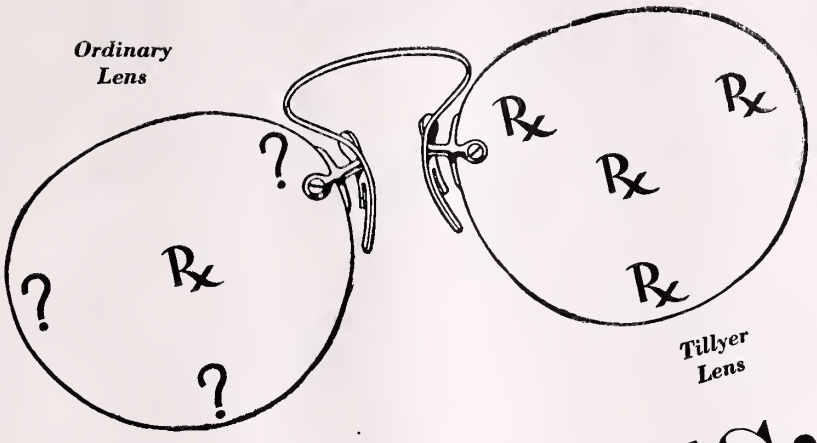
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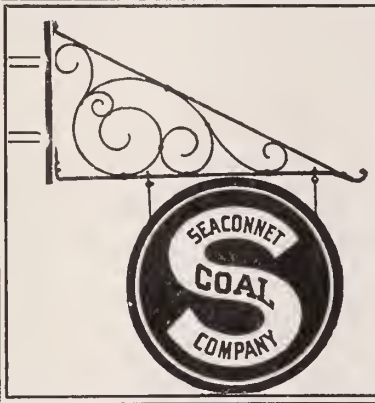
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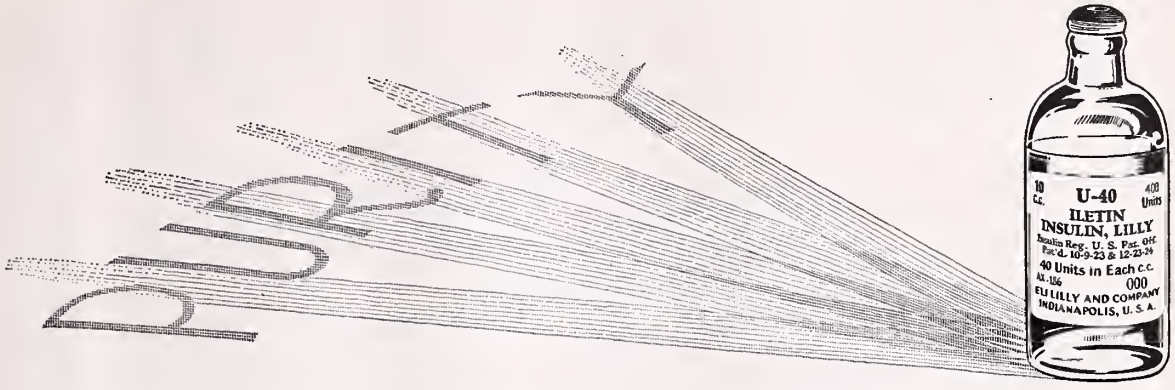
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ORIGINAL ARTICLES

RECENT ADVANCES IN THE CLASSIFICATION AND TREATMENT OF ACUTE AND CHRONIC NEPHRITIS*

By Channing Frothingham, M.D.

Boston, Mass.

It is important to have in mind just what disturbances of the kidneys are going to be taken up this afternoon for discussion. Under the heading of nephritis are included many different lesions of the kidneys which are produced in a variety of ways. Some of these renal lesions and their causes are well understood while others of them are not.

The discussion today will be confined to those injuries to the kidneys produced by toxins. These toxins may be formed from bacterial activity in other parts of the body than the kidneys or they may be chemical in origin from the ingestion of substances toxic to the kidneys, or still they may be unknown in their character and in regard to their site of origin. These toxins may act in an intense manner over a short time producing an acute lesion or they may act over a long period in a less intense manner producing a more chronic lesion in the kidneys, or there may be repeated periods of toxin activity producing combinations of acute and chronic lesions. The extent and character of the injury to the kidneys may vary considerably with the nature of the toxin, its concentration and the duration of its action. Possibly some of the lesions which we look upon as toxic in origin today may eventually turn out to be due to some organism or other non-toxic cause not at the present time recognized so that eventually the number of types of toxic nephritis may diminish. It must also be remembered that the healing from an acute injury to the kidneys may leave scars in the kidney that may lead to progressive degeneration.

*Presented at the annual meeting of the Rhode Island State Medical Society, June 7th, 1928.

At the present time there is considerable confusion in regard to the classification of toxic nephritis. This is due to a variety of reasons. In the first place the pathologists do not necessarily agree upon the exact process which takes place in the kidneys in response to the actions of the different toxins. In the next place the pathologists often try to fit their classifications to that of the clinician and as many of the clinical classifications of toxic nephritis are based on symptoms and as the symptoms in the same type of nephritis may vary with the duration of the process and the extent of the lesion, it is obvious that there is bound to be confusion. Many clinicians have become discouraged in trying to fit the clinical findings in renal diseases to the varied pathological classifications that have been presented by the pathologists and classify their cases by symptoms such as chronic nephritis with edema, chronic nephritis without edema, acute hemorrhagic nephritis and the like. Other clinicians have attempted to classify the cases of toxic disease of the kidneys by their response to certain of the functional tests and they speak of chronic nephritis with chloride retention or chronic nephritis with nitrogen retention. Despite this tendency to depart from classifying acute and chronic nephritis upon a pathological anatomical basis it still seems possible to hitch the various clinical pictures up with the actual pathology in the kidneys provided that one accepts a pathological classification which is at the same time both simple and accurate.

Toxic nephritis may be classified pathologically simply as acute or chronic. Under acute nephritis are grouped those cases with degenerative or necrotic changes in the epithelial cells of certain tubules and those cases with a variety of exudative or proliferative changes in the glomeruli. These lesions are temporary and may heal up without permanent renal changes or upon healing they may leave permanent scars in the kidneys. Under chronic nephritis are grouped those cases of healed acute nephritis which leave a kidney so damaged that normal renal function cannot be carried on

and also those cases of progressive degeneration of certain of the afferent arteries leading to the glomeruli and the vessels in certain of the glomerular tufts with the resulting changes in the tubules supplied by these vessels. In addition the term subacute nephritis may be used to signify those cases of acute nephritis in which the acute glomerular lesions were so extensive that in attempting to heal extensive secondary degeneration in the tubules takes place. Subacute nephritis is really a part of chronic nephritis. Although in acute nephritis it may be reasonable to speak of acute glomerular or acute tubular nephritis because only one part of the urinary units may be involved, in chronic nephritis it must be remembered that all parts of the urinary units, namely, blood vessels, glomeruli and tubules are involved and, therefore, it is not logical to speak of a chronic glomerular or tubular nephritis with the implication that only that part of the renal tissue is involved. For the present also a group of cases called nephrosis must be identified. Nephrosis may eventually turn out to be simply an acute tubular nephritis which tends to run a prolonged course or it may be a general disorder in the body in which lesions in the tubules of the kidneys are simply a part of the process and not the cause of the whole clinical picture.

As suggested above in acute toxic nephritis there may be quite different lesions depending upon the character of the toxin and its concentration and length of action. For example, there may be proliferation of the endothelial cells in the blood vessels in the glomerular tufts or in the lining of the capsule of the tufts. There may be a hemorrhagic exudate into the capsular space or the exudate into this space may be composed of leukocytes and endothelial cells with serum and fibrin. In still other instances the inflammatory exudate may invade the glomerular tufts. Instead of involvement of the glomeruli there may be an acute degenerative lesion in the epithelial cells of the convoluted tubules and the loops of Henle or actual necrosis of these calls may occur. There may be combinations of these various acute lesions. In addition there may be a certain amount of acute reaction in the connective tissue frame work of the kidneys. In these acute toxic lesions in the kidney upon gross inspection the kidneys are usually enlarged and the color not markedly abnormal. The contour generally remains essentially normal. Although the acute lesions may vary considerably in the kidney, it is impossible with our present knowledge to tell clinically what type of acute toxic nephritis is present. For variations in the severity of the process produce quite different clinical pictures so that two different lesions may produce the same clinical picture or the same lesion with variations in its intensity produce quite varied clinical pictures. It would be advantageous if these types could be separated clinically because the prognosis in regard to the development of a chronic nephritis depends in a good measure upon the character of the initial lesion in the kidneys.

Although bearing in mind that there are different types of acute toxic nephritis, it seems justifiable until our knowledge increases to group them as simply acute nephritis. Some of these cases of acute nephritis will heal up entirely without leaving any permanent scarring in the kidneys. Others leave permanent scars and of these permanent scars some may exist without interfering with renal function but the majority interfere with renal function and cause secondary degenerations in the other renal tissues that were not involved in the initial lesion and eventually produce a chronic nephritis.

The cases of chronic nephritis due to toxins may be fairly well divided into two groups. On the one hand there are the cases of renal insufficiency coming on in kidneys which are healing or have healed up from acute nephritis. These kidneys vary considerable in their size and shape depending upon the stage of the reparative process. They may be large, whitish kidneys with extensive fatty degenerative changes or they be small, contracted kidneys unequal in size. In the final stages of this healing process are met the smallest kidneys found at autopsy. In the late stages of these scarred kidneys there may be marked destruction by fibrosis of glomeruli and degeneration of the tubules with cellular infiltration in the connective tissue but there is no evidence of active degeneration going on in the kidney. These kidneys gradually fail to carry on renal function and evidences of chronic renal insufficiency develop. The speed with which these symptoms develop and the character of the symptoms vary with the extent of the lesion and the ability of the remaining renal tissue to function. In those cases in which the patients do not survive long enough for the kidneys to

reach this markedly contracted stage, the kidneys are enlarged and pale and degenerative changes in the tubules are extensive, due to extensive glomerular changes in the process of becoming fibrosed. Remnants of the acute lesions are usually still present in these cases. These are the type which are usually spoken of as subacute nephritis and give a quite different clinical picture from the more scarred and contracted kidneys.

The other type of chronic nephritis is not preceded by an acute toxic nephritis but consists in a progressive vascular degeneration involving the small afferent vessels going to the glomeruli and the vessels of the glomerular tufts themselves. This process is in general similar to the process of arteriosclerosis in the larger vessels. It is a progressive process which involves both kidneys equally and although it does not attack all of the vessels at once the lesions are so distributed that the two kidneys gradually shrink symetrically. Secondary to the vascular lesions there are degenerations in the tubules whose blood supply depends upon the sclerosed vessels and also in some of the connective tissue frame-work of the kidneys. In this type of chronic nephritis the two kidneys are usually about the same size and considerably smaller than normal with a granular surface but death generally intervenes before the process causes the kidneys to become as small as they do in the latest stages of healed acute nephritis. Although this process is similar to that of arteriosclerosis there is apparently some other factor present because the large vessels of the kidneys may show definite arteriosclerotic changes with injury to a certain amout of renal tissue without evidence of this progressive vascular disease going on in the small vessels.

It is not at all uncommon for these vascular progressive lesions to be implanted upon the kidney with scars from a preceding acute nephritis that has healed, so some cases of chronic nephritis may be a combination of these two conditions. The type of lesion that is called subacute nephritis has been mentioned above under the description of chronic nephritis that results from healing acute nephritis.

In a patient the acute character of the nephritis is usually suspected by the onset of scanty urine and diffuse edema especially involving the face and eyes, the history of a preceding acute infection and the age of the patient. Rarely does acute nephritis occur after thirty-five years of age. In chronic nephritis it must be remembered that the clinical picture will be quite varied depending upon the extent of the process and the stage it is in. If, however, one remembers that pronounced and persistent edema with a large amout of albumin and casts and cellular elements in the urine usually means extensive tubular involvement, it will help in deciding what the pathological process is in the kidney. It should also be remembered that edema from failing circulation may complicate the clinical pictures in chronic nephritis. The history of an acute nephritis is essential in making the diagnosis of chronic nephritis following an acute although the age of the patient is a help, for chronic, progressive, vascular disease in the kidneys usually comes after thirty-five years of age while acute nephritis with the resulting chronic, renal insufficiency usually comes on early in life. In some instances the clinical picture of healed acute nephritis with renal insufficiency and chronic, progressive, vascular nephritis is practically identical. In other cases the clinical picture is quite different. This difference as stated above depends upon the stage of the process and its extent. Acute nephritis may be superimposed upon chronic.

If one will keep this simple classification in mind and take a careful history of the case as well as studying the case from the point of view of blood pressure, urinary findings and edema, it will usually be possible to predict what the picture in the kidneys will be at autopsy. Temporary elevation of blood pressure, temporary edema especially of the face, scant urine and usually numerous red blood cells as well as casts in the urine mean acute nephritis. In chronic nephritis no edema, chronically elevated blood pressure, hypertrophied heart with a urine that may show only a little albumin and a few casts and red blood cells in the sediment usually means chronic, progressive, vascular disease or healed acute nephritis with renal insufficiency. An edematous patient, without elevated blood pressure and with a urine containing much albumin and many casts and cellular elements usually means extensive degenerative changes resulting from an extensive acute glomerular nephritis in the process of attempted repair. Nephrosis also presents this picture but there are certain special diagnostic points that will be mentioned later.

Unfortunately there has not been much of importance added in recent years to our knowledge

of the treatment or prevention of acute nephritis. One should remove the source of the toxin if possible and it is generally assumed that by forcing fluids in acute infections and other toxic conditions that the toxins reach the kidney in a more dilute form and, therefore, are less likely to produce lesions. With our present knowledge there is no way to specifically influence the healing of acute lesions in the kidneys. This must be left to nature Therefore, the problem is one of working on the patient as a whole rather than upon the kidneys in particular.

On general principles it is advisable to put the kidneys to a complete rest as possible by cutting down to a minimum the elements brought to them for excretion. Immediately the question arises how much fluid should be given, for, of course, water is the main substance excreted by the kidneys. Evidence is lacking as to whether it is better to force fluids in those cases in which fluid is put out with difficulty and again whether it is better to force fluids in those cases in which the fluid is apparently well put out. With our lack of knowledge it seems best to use fluid up to 1000 or 1500 c. c. daily in the cases in which fluid is not well put out and in the cases in which the fluid is put out to push it up to 2000 or 3000 c. c. In regard to the solids put out in the urine it is a simpler matter to avoid overworking the kidneys. By physical and mental rest the amount of tissue broken down in the body is kept at a minimum and by the avoidance of any more proteid in the diet than is necessary to repair the wear and tear of body activity this part of the renal activity, namely, the excretion of nitrogenous products, is kept low. Usually a diet of 20 to 30 grams of proteid daily is sufficient. Salt should also be kept at a low level and a diet containing about 2 grams a day is suggested during the acute stages. It would be interesting to know whether any one type of acute nephritis does better upon a diet which renders the urine alkaline or acid. Unfortunately our knowledge in this regard at the present time does not justify conclusions and this is a field for study in the future. In the same way there is great ignorance in regard to the other substances that may be excreted in the urine such as the coloring matter of various food stuffs and other elements in the diet. In general it seems wise to avoid substances as much as possible which are known to be excreted through the kidneys. Excretions through other channels as the bowels and skin should, of course, be encouraged.

The question of the value of stimulation of excretion by diuretics also comes up for consideration. There is some experimental evidence to suggest that diuretics in acute nephritis may be actually harmful. On the other hand, there is a reasonable amount of clinical experience based perhaps on rather loose observations in favor of increasing the output of fluid and diminishing the edema by the use of diuretics. There is no proof, however, as to whether any real advantage is obtained by increasing the output of fluid. It is conceivable that the diuretics may cause actual damage or retard the healing of the lesions. In view of our ignorance on the subject it seems well not to use diuretics adhering to the principle of trying to rest the kidney as much as possible.

There has been a definite advance in determining the cause and in the treatment of uremia in acute nephritis especially in children. From work done by Blackfan and some of his colleagues at the Children's Hospital in Boston it seems quite evident that the uremia of acute nephritis is produced not by the heaping up of nitrogenous products in the blood but by edema of the brain. This edema of the brain can furthermore be influenced by the use of magnesium sulphate. The magnesium sulphate is given by mouth and rectum with the hope of reducing the blood pressure. If it is not successful in accomplishing this then a solution of one per cent. magnesium sulphate is given intravenously up to 200 c. c. if necessary.

Another point which calls for decision on the part of the practitioner is whether to recommend in acute nephritis the removal of foci of infection, and if so, at what stage of the illness should this be done. Although there is no doubt that acute nephritis develops from the toxins of bacteria that are active in tonsillitis and other acute infections, I think there is room for reasonable doubt as to whether acute nephritis develops from the toxins that may arise from the more chronic and less virulent types of foci of infection such as silent abscesses at the roots of teeth, bacteria in the crypts of hypertrophied tonsils and chronic catarrhal conditions in the sinuses. Certainly if repeated acute infections of a serious sort develop in the tonsils, it seems well to have them removed

and if following an acute nephritis the picture almost clears up but does not entirely, it seems worth while to be radical and recommend the removal of a more silent focus of infection but it seems hardly necessary to hurry the removal of such foci.

Another point in regard to acute nephritis which should be kept in mind is to realize when the acute nephritis is cured or when one must admit that a chronic nephritis has developed. Certainly a period of six months should be insisted upon with careful rest before one should feel that the albumin, casts and blood cells in the urine represent a process which is no longer capable of returning to normal. Some workers have claimed that all signs of disturbance in the urine from an acute nephritis have not disappeared until after a year from the onset of the acute nephritis and they have also claimed that in some instances these signs have not disappeared until foci of infection have been removed. Attention should be called to the fact that sometimes following an acute toxic nephritis an orthostatic albuminuria will for the first time appear. This may be confusing in trying to decide if the acute nephritis has cleared up.

For chronic nephritis due to progressive vascular disease or resulting from healed, acute nephritis very little has been added in the way of treatment in recent years and there certainly is nothing specific. Attempts should be made to increase elimination through other channels, and as in acute nephritis, the substances which are put out through the kidney should be taken into the body in as small quantity as possible. In addition to the rest offered the kidney by care in the diet, physical and mental exertion should be cut down to a minimum so as not to cause any increased breaking down of tissue with the formation of substances which the kidneys must excrete. Again the question arises as in acute nephritis in regard to how much fluid should be allowed and in our ignorance it seems best to arbitrarily fix the amount at about 2000 c. c. The question of the value of diuretics is as unsettled in this condition as in acute nephritis. The various procedures to wash out the heaped up products of metabolism from the blood stream by artificial means have not proved to be of practical value. Just how much to cut down on the patient's activity in advanced chronic nephritis is a problem which one must decide after taking into consideration the desires of the patient. It is not for the physician alone to decide on a very restricted life in order to gain a few more months or years of life.

A more difficult problem for the physician is to decide what to advise in the early stages of renal disease of this type where evidence in urine points to a beginning chronic nephritis but without any clinical symptoms of the disease. My feeling is that at the present time the medical profession does not know how to prevent the steady development of chronic nephritis. The question comes up, therefore, as to whether any changes in regard to the patient's habit of work or play or diet or the use of alcohol, tobacco, tea and coffee should be made. Of course, it is reasonable to have the patient avoid excesses in any line on general principles but if the patient is leading a fairly normal but active life is anything to be gained by changing it? There is very little evidence to support such a viewpoint.

For that stage of chronic nephritis called subacute nephritis the main difference in regard to treatment is the problem of edema which is the outstanding symptom of this stage of the disease. It also should be remembered that this is more of a transitional stage and some of the changes in the kidneys may still be somewhat temporary and, therefore, more attention should be paid to rest and relief of load for the kidneys than one would in a more chronic type of the disease in order for more effective repair to take place. As mentioned above, this edema is presumably due to extensive tubular involvement and relief of this symptom may be sought for by the same procedures as will be mentioned below in the treatment of nephrosis. So far as prognosis is concerned one should remember that many patients pass through this edematous stage of early chronic nephritis or subacute nephritis and so far as symptoms are concerned appear well but they will be found to have albumin and casts in their urine indicative of renal insufficiency or continued degenerative changes in the kidneys. As has been said above, it is the early edematous stage of chronic nephritis resulting usually from an acute nephritis that stimulates nephrosis.

Physicians at the present time are undecided whether nephrosis is primarily a degenerative process in the tubules of the kidneys which may

eventually recover or a general disturbance in the body with marked degenerative changes in the tubules of the kidney as one of the symptoms. The outstanding clinical feature of nephrosis is marked edema. There is usually a normal blood pressure. The urine shows an excessive amount of albumin with very little in the way of cellular elements or casts in the sediment and practically no blood cells. The renal function as shown by the 'phthalein test and the blood urea nitrogen is usually normal. The total proteid in the blood is usually low and the albumin percentage less than the globulin percentage which is contrary to the usual findings. In addition to the globulin being relatively increased in the blood it is also actually increased and in like manner the cholesterol in the blood is actually increased. The calcium in the blood is low. In addition in these cases there is usually a lowered basal metabolic rate.

The course of this disease is a chronic one usually lasting over months. It also tends to recur. It may, however, heal up without leaving any evidence of chronic disease in the kidney. During the course of a nephrosis inter-current infections are apt to occur and they may lead to a fatal termination. In addition an acute infection may lead to a return of the nephrosis.

The new points in the treatment of nephrosis consists in giving the patient a diet high in proteid up to 150 or 250 grams in order to make up for the excessive amount of albumin that is lost in the urine. In like manner the diet should be low in fat on account of the increased cholesterol in the blood. On account of the low basal metabolism thyroid medication is suggested and on account of the diminished calcium in the blood calcium chloride is given. Also parathyroid medication has been suggested because of the disturbance in the calcium content of the blood. A variety of diuretics have been tried and usually one after the other have passed off the stage. Lately Salyrgan in 10 per cent solution has been given every two or three days intravenously in 2 or 3 c. c. doses and it has been claimed that it is beneficial in relieving the edema. This preparation contains about 36 per cent of mercury and seems to act more efficaciously if ammonium nitrate is given in conjunction with it.

In conclusion I should like again to urge the practitioners to have a clear picture of the pathological processes both acute and chronic which may occur in the kidneys as a result of toxins and also to have them realize that by careful analysis of the clinical picture with special regard to the history, the presence or absence of edema, blood pressure, urinary findings and functional tests for real efficiency it will be possible to make a very accurate guess as to what the renal pathology is. It also is hoped that more suggestions in regard to other features than the proteid and salt content of the diet will be made in the future. Also it is hoped that the effect of diets, etc., upon the progress of the lesions in the kidneys as well as the clinical picture will be more accurately investigated. One of our greatest needs is a more definite decision in regard to how one should guide a beginning case of chronic, vascular, progressive nephritis in order to retard the development of the disease.

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By Dr. Charles J. Smith
Providence, R. I.

The goal of the medical and dental profession should be the conservation of the patient's health. At the present time more and more is being accomplished in preventive medicine and dentistry, but the full accomplishment of this prevention can only be obtained by closer co-operation between the two professions.

The dentist must always bear in mind that the tissues upon which he is called to diagnose and treat are closely associated, and are integral parts of the body as a whole. Infections in and about dental structure can be carried to remote parts of the body through the blood streams and on account of their seemingly selective affinity, germs so carried, can and do set up remote infections.

And, conversely, the medical man must bear in mind that his examination of the patient is not complete unless he has had the opinion of a dentist on the conditions of the oral cavity upon which he is especially trained and experienced. A process of elimination must be resorted to in order to arrive at the primary cause. This mode of diagnosis is often used by the medical man when he refers a patient to a hospital for observation.

*Read before joint meeting of Providence Otological Society and R. I. State Dental Society.

The Subject of Pain

Pain in one form or another in all probability is more often discussed and experienced in dental treatments than in the other fields of medicine.

In describing pain as we generally find it we must consider two types.

Pain, firstly, may be a specific sensation resulting in a painful or sore spot duly identified and localized.

Secondly, it may be a feeling of intense unpleasantness, associated with emotional reactions. This is not a true and localisable sensation but a diffuse experience. Both types we are constantly meeting in our daily routine.

A tooth bearing a large cavity with decay encroaching upon the nerve and which the individual readily points out to us as the cause of his discomfort may illustrate the first description of pain.

Pain in the ear, otolgia, which may be reflex from a dental pulpitis which tooth, however, does not give any seeming annoyance to the individual may constitute an example of the second definition of pain.

In contradiction to pain we have pleasure. Pleasure, however, is not a specific sensation, but a general localized feeling tone.

The sensation of pleasure some times seems to be a temporary change after the relief of pre-existing pain or discomfort. By one philosopher it has been stated that there was no such thing as pleasure, but that the sensation experienced is only one of relief from pain. But this can hardly be true, for pleasure can and is experienced unassociated with any preceding disagreeable sensation. Accomplishment of definite ends results in an experience of pleasure regardless of whether the accomplishment was preceded by agreeable or disagreeable sensations.

Now let us consider. Pain as a symptom.

It may be definite leading to the focus or cause, or vague and indefinite, requiring most painstaking study and the cause arrived at by a process of elimination.

It is the province of the dentist to determine whether the pain is of dental origin. He must determine the condition of the teeth and surrounding structure which come under his field.

He must consider the possibilities of pain from a pulpitis, alveolar abscess, pericementitis, unerupted and malposed teeth.

In the diagnosis of pain a careful examination of the part to which the pain is referred should be made, and with every pain we should seek the local cause.

Thorough medical examinations should include a thorough oral examination. The medical man must realize that he is not especially equipped to make a final decision on the teeth without a consultation with a dentist on the particular case. The dental profession too must realize that in the final analysis the health of the patient rests almost solely on the medical man, under the present status.

There are numerous conditions of the nose and throat and ear which are due directly or indirectly to diseased teeth and insanitary conditions of the oral cavity.

In the young, gross abnormality of the upper maxilla presenting the narrow constricted arch with high palate should immediately impress the dentist and the rhinologist of early corrective treatment, or a condition of this type results in restricted breathing, which, of course, means lessened resistance, faulty mastication and leads to local and general infections. It may obstruct the normal ventilation and drainage of the sinuses predisposing to sinusitis. Asthmatic conditions in later life too may result from this condition.

Dental infections may be the cause of tonsilitis, laryngitis vertigo tinnitus and pain in the ear. This is especially true of infections in and about lower third molars. These infections are not like tonsilitis and laryngitis but definitely simulate them.

A neuritis of the eighth cranial nerve may have its origin dentally and cause ringing in the ear and some times deafness.

The maxillary sinuses may become infected by pathological conditions in and about the teeth. The percentage of maxillary sinus infection of dental origin, however, is not large compared to the infection of these air spaces by the nasal mucosa and accessory sinuses.

The maxillary sinus is hardly discernible at birth and gradually develops to its greatest expanse about the twelfth year, and its form is most variable, even those in the same individual differing greatly from one another. It is lined with mucoperiosteum which is continuous in the other sinus. Its mucal secretion is carried to the nasal cavity through the ostium maxillare by ciliated epithelium. Very often the sinus is divided by thin

laminae of bone. When this condition exists drainage of the antrum is difficult. Very often the roots of the molar and bicuspid project into the antrum covered only by the lining membrane.

Because of the proximity of these roots to the cavity pathogenic organisms from diseased teeth and surrounding structures can easily enter the antrum and cause an empyema, which condition may also develop from the existence of foreign bodies in the sinus.

We as dentists are all fairly well acquainted with the symptoms of maxillary sinusitis and it is our duty to eliminate dental causes of this disease. We must always bear in mind that a sinusitis of this type may be secondary to a primary infection of the accessory sinuses.

Determination of a sinusitis should be made with the aid of transillumination and X-ray, but under no condition should diagnosis be made from the small dental film or a lateral picture of the suspected side. The so-called anterio posterior film focussed for the express purpose of showing both antra should be made use of and the appearance of the antrum on one side compared to that on the other.

Drainage of the maxillary sinus whether of dental origin or not properly belongs to the rhinologist or one especially trained in this particular field.

Opening of the antrum through the alveolar process should be discouraged, although it is a low point for drainage, the chances for further contamination are too great and the prognosis of an acute sinusitis by proper treatment is very good, but on the other hand a chronic sinusitis is most disheartening. A chronic sinusitis may very easily develop and in order to secure proper drainage a radical antrum operation may be necessary. This means an extensive opening through the inferior meatus and sometimes the middle miatus of the nose of the infected antrum.

The fifth cranial nerve covers such an enormous area in its different ramifications and anastomoses that irritation of one branch may cause reflex disturbances in other branches and other cranial nerves.

Teeth are important organs of the body, and they should not be ruthlessly removed. Care should be taken to determine where the primary disturbances originate. Destructive processes in and about the teeth very often are secondary to pathology existing elsewhere. The loss of tonsils it seems now does not necessarily handicap the individual, the body evidently gets along nicely without them, but the loss of teeth is something more serious; to be sure a substitute can be arranged and in a majority of cases the function of mastication is restored, but the facial contour cannot always be retained.

We as dentists must remember that nature has not established the bulwarks of defence in dental and surrounding structures that she has in almost every other organ in the body.

MISCELLANEOUS

Medical and Pharmaceutical Co-operation

Perhaps one of the outstanding reasons for the progress in the scientific development of new products has been the spirit of co-operation which has existed between the medical profession and the pharmaceutical industry.

By this close co-operation medical science has contributed to pharmaceutical progress and the manufacturing pharmacists of the country in turn have made a definite contribution toward the development of new medicinal products.

On Wednesday, December 5, the officials and members of the medical, pharmaceutical and allied professions of Lafayette, Indiana, were addressed by Dr. Charles E. Vanderkleed, Chairman of the Contact Committee, of the American Pharmaceutical Manufacturers' Association.

The subject of Dr. Vanderkleed's address was "Improvement in the Quality of American Drug Products due to Co-operation in the Industry." It is interesting to see the representatives of the several allied professions making arrangements for a periodical study of mutual interests of professional nature with a view to increasing mutual usefulness.

It is only through medical and pharmaceutical co-operation that the greatest advances can be made in conquering disease and improving the health of the American people.

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FREDERICK N. BROWN, M.D, *Editor*
309 Olney Street, Providence, R. I.

CREIGHTON W. SKELTON, M.D., *Business Manager*
166 Broad Street, Providence, R. I.

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Roy McLoughlin, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

AS TO SURVEYS

At a recent meeting of the Council and House of delegates of the Rhode Island Medical Society, and at the December meeting of the Providence Medical Society a vote was passed expressing sympathy with a health and hospital survey in Providence which is being sponsored by the Council on Social Agencies.

Surveys are all the rage during recent years, surveys of all kinds. If they are honestly conceived and done by persons who are expert in the matters to be surveyed the results should be beneficial. The school survey in Providence made by Dr. Strayer and his associates laid a solid foundation on which the school authorities can build for many years.

Some years ago a housing survey and a tuberclosis survey were made in Providence. It can't be said many reforms grew out of them. However, the facts brought out did furnish valuable information. They were limited surveys. The survey planned by the Council on Social Agencies is to be very comprehensive, including the health

needs of the community based on surveys elsewhere and a résumé of the work being done by the hospitals and all other health agencies in the City. Such a survey has never been done here before and there are several reasons for its justification. More and more health agencies are combining for the purpose of eliminating unnecessary and over-lapping services, a movement which should and does result in better service to the sick and handicapped, and at no greater expense. It cannot be gainsaid that the work done by health agencies and hospitals should not be competitive. So far as possible health work should be co-ordinated.

It is proposed that the survey be done by the American Public Health Association. It is only recently that this national association of health officers of the United States and Canada has undertaken to survey community health needs. It is eminently fitting that they should enter this field for they have no other purpose than that of promoting all sound health measures. It is not commercial and only the actual cost of the survey is made. Those who have charge of the survey make sure before they undertake it that they have the support of the health officer, physicians, hospitals, and other responsible health agencies.

Physicians should be interested in such a survey because it involves institutions to which so much of their time is given with little or no financial return. In fact, some of these institutions could not exist except for this free service so generously given by busy physicians.

This survey will primarily be a fact finding inquiry into how well the health needs of Providence are being met by present agencies. It is not proposed to investigate the character of the work of the hospitals. It will, however, reveal the number of kinds of diseases treated, the expense incurred and how that money is obtained. In view of the reliability of agencies concerned in the survey there is good reason to believe that their findings will prove a benefit to the city.

BUT WE MUST BE CIRCUMSPECT

American prosperity is reflected in increasing demands for subscriptions to charitable and semi-charitable institutions. One of the large items of public beneficence is for hospital support. The amazing response is sufficient evidence of the public's confidence in the representatives of the medical profession who ask for donations. Large amounts of money are given without a single question as to the need of the fund or stipulation as to how it shall be spent.

Unnecessary duplication of some medical work and appeals for money have naturally been made in the past, but these were of small importance and of minor consideration. Higher costs of hospital support now, however, make it imperative that the confidence and generosity of donors be safeguarded in every possible way. Moreover, sound business principles demand that money raised shall be spent intelligently and with a view of doing the greatest good for the community.

Several cities are making impartial surveys of their health requirements and comparing these facts with their hospital services. A move is under way to secure such a survey for Providence. It is highly commendable. The Rhode Island Medical Society adopts a sympathetic attitude toward this study. This action by a representative medical body of the state does much to prove the profession's sincerity and to justify the confidence in them which the giving public has always accorded.

EXPERT TESTIMONY

A recent judicial decision has directed our attention very forcibly to the low repute in which medical expert testimony stands at the present time, and should cause us to consider the reasons for this lack of confidence in professional witnesses. We are forced to admit that the situation is very unsatisfactory. In certain actions at law the decision, to be just, must necessarily rest upon information furnished by someone with medical training, as neither judge nor jury can be expected to have the technical knowledge required. It is essential, therefore, that this information be furnished by an impartial and unbiased authority. Under present conditions this is rarely if ever the case, for each party to the action engages a medical expert to furnish testimony; such testimony, being purchased by interested parties, is by its very nature prejudiced. It cannot be denied that many physicians, engaged

under these conditions, honestly endeavor to give accurate and uncolored testimony; it is equally and regrettably true that it is possible to buy evidence, by "experts" of more or less repute, in support of almost any contention. The common knowledge of this latter fact discourages many doctors, well qualified by training and experience, from appearing as experts as they do not wish to be classified with gentlemen just mentioned. From the point of view of the medical profession, the solution of the difficulty would appear to lie in the appointment by the court of a competent medical man in a semi-judicial capacity, as a sort of referee, who could consider and decide all medical questions in a given case, this referee to receive his compensation from the state and not directly from the litigants. We believe that this method, or a similar one, would render available the services of many men who will not serve under present conditions, and would result in a much more accurate approximation of justice than is possible under the existing system.

THE RELATION OF THE TEETH TO THE SINUSES*

BY JOHN J. GILBERT, M. D.

PROVIDENCE, R. I.

The dental origin of some pathological conditions of the eye, ear, nose and throat may be on debatable grounds, but maxillary sinusitis, resulting from infections of the teeth, is not. The relationship here is both intimate and positive. This sinus becomes infected directly from the teeth, while the other nasal cavities are involved indirectly, as a result of extension of the infection from the maxillary sinus, after it has been damaged. Therefore, I will limit this paper to the discussion of what takes place in the infection of this sinus from the teeth, and the treatment of it.

Various rhinologists have presented statistics to prove that from 30 to 50 per cent of all antral disease is of the dental origin, and since infection in this sinus is the most overlooked or undiscovered of all sinusitis, these figures do not seem too high. In the past few years, due in large measure to increased interest in and in recognition of pathology of the antrum by dentists and exodontists, many latent chronic cases of maxillary sinusitis are coming to light. Many of these present symptoms referable only to the teeth, and so seek the advice of the dentist first, or, after the extraction of an upper bicuspid or molar tooth, the dentist discovers a lead into the antrum where much pathology exists.

It is at once evident that there is a great overlapping of work of both dentist and rhinologist in this field. I believe that the dentist of today is very careful after the extraction of one of these teeth to investigate the socket with a probe, under aseptic conditions, to determine whether or not a communication exists between the socket and antrum, or he may find this unnecessary, as the extraction alone will often reveal a good sized tract into the sinus, through which pus exudes. If, on investigation, chronic pathology is found within the antrum, it is my feeling that the dentist is unsuited to handle the case alone unless he can do intra-nasal surgery, as the ability to enlarge the opening or make one in the canine fossa alone will not suffice. On the other hand, it would be the height of folly for the rhinologist to do a radical operation on such a sinus, and leave in situ the offending tooth or any of the necrosis about it, so he must call the dentist to his aid. The only single person qualified to handle such a situation is the oral surgeon, who has been trained in both medicine and dentistry, and when such a person is not available the same final results can be obtained only through intelligent co-operation between dentist and rhinologist, each recognizing his limitations in this field and admitting freely, as he should, that antral disease of dental origin does not lie within the domain of either exclusively.

Before taking up the problems that confront us in the diagnosis and treatment of antral disease, I wish to recall briefly to you the close anatomical relation between the upper bicuspid and first molar teeth and the floor of the maxillary sinus. In some cases, as you remember, the roots of these teeth actually penetrate the sinus, while in others the intervening bone is so thin that it offers no resistance either to infection from the

*Read before the joint meeting of the R. I. Dental Society and the R. I. O. O. and R. Society, Providence, April 12, 1928.

roots or to forcible manipulation during extraction. The lining of the antrum is of mucous membrane, which serves as its periosteum. This lining is very resistant to infection, and may recover sometimes after fairly long standing trouble, if given free drainage and ventilation. Once, however, small areas slough off, or the bone shows superficial necrosis, it will not recover, and must be removed. You will also recall that the antrum has one small opening high up in the nasal wall, altogether too small for either drainage or ventilation.

Let us first consider the not uncommon accident of losing a tooth root into the antrum during extraction, or the loss of a whole tooth for that matter, which I have seen happen, or a tube or other foreign object placed in the alveolar opening into the antrum for drainage or treatment. The first impulse is to attempt removal through the tooth socket after enlarging it with a burr or rasp, and, if the operator is lucky, he may recover it. If there is a sound tooth on either side, however, he will find it difficult to make the opening large enough, and it becomes a hit and miss affair, depending on the size of the object, the size of the hole, and the fishing ability of the operator. If the adjoining teeth have been extracted, or are to be extracted, the chance of success by this route is greater. It has always seemed a better plan, however, though a more formidable one, to make an opening high up in the canine fossa, and under good light and direct inspection, to remove the object, which can now be seen, inspect the sinus for evidence of pathology of the membrane, remove it, if any is found, sew up the wound, encourage the opening in the alveolus to close, and drain and irrigate the sinus through the nose. Under no condition should the object be allowed to remain in the antrum, as it will set up an intense reaction, so that it is better to face the music at once and remove it as soon as possible before it causes extensive trouble.

In acute abscesses of the teeth, the antral infection resulting will manifest itself at once with pain and tenderness over the cheek and after a few days, a unilateral discharge of pus and blood from the nose on the same side. This side of the face will show obstruction to both the x-ray and transillumination. In addition, if there is doubt, puncture and irrigation of the antrum through the nasal wall will show purulent secretion in the return flow of water. It is very easy to diagnose such a case, and there are very few other conditions that simulate it. The dentist must here decide whether to remove the tooth at once or wait until the acute signs of abscess have subsided, allowing localization to take place. Both methods have many adherents. In either event, the antrum must be drained and irrigated if there is increasing pain and general toxemia.

This acute condition may be conflicted with a periosteal abscess occurring either before or after the extraction of an abscessed tooth of the upper jaw. In the usual case of sinusitis, there is no swelling over the cheek, and if marked swelling occurs as it does in periosteal abscess, the antrum has perforated (a rarity) or the infection is external to the sinus, i. e., under the periosteum of the superior maxilla. The periosteal abscess results practically always from the canine or incisor teeth, and these teeth are rarely the cause of empyema of the sinus, the sinusitis being caused from trouble in the bicuspid or molar teeth. Further, there is no purulent discharge in the nose in the case of periosteal abscess, and if doubt exists, puncture and irrigation of the sinus through the nose will return a clear fluid and will definitely rule out the sinus. X-ray and transillumination are not so helpful here in making a diagnosis, as the periosteal abscess may interfere with penetration and give a result not unlike a picture of sinusitis, When the periosteal abscess is opened in the superior maxillary region, no connection with the sinus will be found by probe.

A dental cyst, if suppurating, will also simulate acute antral disease. Enlargement of the alveolus or swelling in the hard palate would suggest cyst, an antral disease as stated above does not cause the upper jaw to distend, and never causes the palate to bulge. The outer wall of the cyst may perforate and give rise to an abscess of the cheek or an opening into the hard palate or alveolar margin, but then a probe will establish the fact that such a cyst does not communicate with the antrum or nose.

Malignant disease of the antrum will cause bulging of the walls, edema over the cheek, pus in the nose, etc. X-ray in this case will be of great help. Transillumination would remain the same

in this case after puncture and irrigation as before, and if the growth was extensive there would be considerable resistance to the introduction of the irrigating fluid.

In chronic empyema of the antrum from dental origin, the discharge from the nose is unilateral, fetid, and at times caseous. The patient is conscious of it as well as his friends, and he seeks relief promptly. X-ray, transillumination and puncture will all help to clinch the diagnosis. In addition there may be headache, dullness, lack of energy, signs of toxemia, vertigo and buzzing in the ear, but the foul discharge from the nose is the most constant and outstanding complaint. When caries of the bone takes place, there may be severe pain. When, in addition, the upper bicuspid or molar teeth on the suspected side are definitely infected, they must be considered causitive factors until they are ruled out. If these teeth have been previously removed, X-ray plates of them prior to extraction or the condition of them at the time of extraction becomes helpful in determining whether they were the cause of the infection in the antrum that is being dealt with.

There is a type of sinus disease existing that is not so easily diagnosed, yet which gives severe systemic absorption. After using all the clinical and precision methods we know, we are sometimes in doubt, and only an exploration of the cavity through the canine fossa opening or through a large opening made in the antro nasal wall will decide for us. In this type of case, there is an insidious infection at the apex of the tooth. This infection causes the mucous membrane lining the antrum to become slowly thickened and polypoid without producing pus. X-ray, transillumination and puncture and irrigation, our old standbyes, may in such a case reveal very little to help. These cases are often discovered by accident, should a tooth need extraction or if a cold in the head lights up the condition in the antrum and makes it acute. Many of these cases remain undiscovered and represent, in my opinion, a focus of infection that remains after teeth, tonsils, gallbladders, intestines, etc. have been dealt with in an effort to get rid of infection. In some cases, X-ray may actually make the diagnosis of polypoid degeneration of the antrum, and I have had one such case, in which the X-ray finding was the only positive one obtained. At operation, the antrum was filled with polyps and caseous material, and that was the interpretation given on the plates before operation. I would not have you believe from this that X-ray is infallible and should be relied upon in making a decision always, but rather in obscure cases any one of the tests made may give you information that the others do not.

It is in the treatment of sinusitis of dental origin that our endeavors are likely to be quite divergent. From the point of view of the rhinologist, two things are essential. First, a thorough removal of all sources of dental infection, and this infers not only the tooth itself but also any necrosis about it. Any attempt to retain the tooth and drain it through the root canal will not do in these cases. The second consideration necessary for cure is adequate drainage and ventilation. To illustrate this; I recall a case of sinusitis that continued to drain pus freely in spite of repeated puncture and irrigation for weeks. After making a large opening in the antro nasal wall under the inferior turbinate, the condition cleared up in a few days without any further washings, showing the importance of ventilation as a factor. Subsequent X-rays and transillumination showed the antrum to be clear, and here I would like to state that we should not consider a case healed because the fistulous tract has closed in the alveolus, or because pus no longer flows through it or into the nose. In addition, X-ray, transillumination and irrigation, which demonstrated trouble in the beginning, should be repeated to show that it no longer exists.

There are numerous ways to secure drainage. If, on extraction of a tooth, pus is seen coming from the antrum, it seems logical to irrigate the antrum through the tooth socket, as so many of you do, for a short time. If there is no long standing pathology present, the chance of the condition clearing up is good, but if the sinusitis does not yield readily, you are wasting time by this method, and if you hope to get adequate drainage and ventilation you must enlarge the alveolus opening greatly. If you do this, you are confronted with destroying adjoining sound teeth or with preventing secondary infection through the opening in spite of antiseptic pastes or dressings employed; or worse still, if you make a really worth while opening, and keep it open for any length of time, or use a tube to keep

it open, you will produce a fistulous tract that will not close, or that requires a dental plate or a clever plastic operation to close. Nor will an opening in the canine fossa alone suffice, since this must be kept open with the same objections prevailing. Again, when these measures have failed because of chronic pathology present, the patient must submit to a radical operation after months of treatment through the alveolus tract and is not in a happy mood about what has gone before. It cannot be denied that many cases are cured by this alveolus method so popular with dentists, yet many cases of antral disease recover spontaneously after removal of infected teeth without further treatment, and since this method can not hope to cure chronic cases, from the very pathology that exists in them, do not persist long with this type of treatment, and be sure that the closure of the alveolus opening and the cessation of the discharge are not alone enough to assure you of a cure, but follow up this evidence of a cure with X-ray, transillumination, etc., to prove that the antrum is clear.

The rhinologist believes in some such procedure as this: First, remove all dental pathology and encourage the opening to close, if one exists. Next, an opening into the antrum through the nasal wall under the inferior turbinate, large enough to admit the tip of a finger. This gives plenty of drainage and ventilation and makes it easy to wash out the antrum. There is room enough through this opening to inspect the lining of the sinus. If chronic pathology exists, and further operation is necessary, it will only require an opening in the canine fossa to complete the radical operation since the nasal part of it has already been done. Again, the chance for secondary infection is very much less through the nasal opening than through one in the mouth, which reeks with organisms and cannot be sterilized nearly as well as the nose.

Most antral disease is cured by less than radical operation through the canine fossa, though there are rhinologists who do not believe this to be so. The radical operation should be reserved for the extreme cases, since there are some objections to it. During this operation, in which an opening is made in the canine fossa, the nerve and blood supply to the upper teeth may be injured or destroyed, if the incision is not made extremely high on the superior maxilli, or if the bone of the anterior wall is taken down too far. In the upper jaw the vessels and nerves to the teeth are higher up from the roots than in the lower jaw. If these are destroyed, the patient will complain of numbness in the upper teeth, a seeming elongation of the teeth, and X-rays taken on such teeth show a proportion of apical abscesses or show they become devitalized as long as two years after operation. This is a sad result, but this objection may be overcome if the opening is made well up in the maxillary wall.

The difficulties and ill feeling often existing between dentist and rhinologist over the diagnosis and treatment of antral disease of dental origin are due chiefly to the failure of one to get the view point of the other, or the attempt of one to invade the field of the other. The dentist has the utmost desire to conserve the teeth, and is sometimes reluctant to condemn them, especially if he has spent a lot of time in treating and filling them. I have known a few to refuse to have radiograms taken on devitalized teeth, where a focus of infection was sought, and declare the tooth sound, when subsequent X-ray and extraction proved otherwise. That attitude is unusual, as most dentists are ready to co-operate fully. The rhinologist on the other hand, is concerned with the health of his patient primarily, and feels no patient should keep all his teeth at the expense of it. However, he has no right to demand or suggest the removal of teeth that he is not certain are at fault, and even when it is agreed that certain dental work should be done, he should not concern himself with the technical details, which are best left to the dentist. In this particular, the rhinologist has been too domineering in directing what should be done on a given tooth.

Each has his problems to decide, and they are not always easy in the treatment of antral disease. Each should be very tolerant of the other's viewpoint, give careful, scientifically acquired information to the other on a given case for a favorable outcome. In brief, in sinus conditions from infections from the teeth and conditions that simulate them, we need your co-operation and assistance, and I believe that you will find ours helpful in your problems where they involve the antrum.

SOCIETIES

The Rhode Island Medical Society

The regular quarterly meeting of the Rhode Island Medical Society was held December 6, 1928; the meeting being called to order at 4:30 P. M. by the President, Dr. Arthur H. Harrington.

The minutes of the September meeting, and the meetings of the Council, and the House of Delegates were read by the Secretary and approved.

The President made the following appointments:

Delegates to the New England Medical Societies:

Maine: Dr. D. S. Latham, Dr. H. A. Jones.

New Hampshire: Dr. Harvey Sanborn, Dr. Alex. M. Burgess.

Vermont: Dr. S. A. Welch, Dr. Geo. L. Shattuck.

Massachusetts: Dr. J. W. Keefe, Dr. Geo. S. Mathews.

Connecticut: Dr. John Champlin, Dr. Niles Westcott.

Member at large of the Board of Trustees of the R. I. Medical Library Building: Dr. Harry L. Barnes, Wallum Lake.

Anniversary Chairman: Dr. Walter L. Munro.

The President also called attention to the death of Dr. James Morgan, and Dr. James H. Davenport, and requested the Committee on Necrology to draw up obituaries to be presented at the annual meeting.

A report by Dr. Byron U. Richards, a delegate from this Society to the New England Medical Council, was read by the Secretary in the absence of Dr. Richards. It was moved and seconded that this report be received and published. So voted.

Dr. F. N. Brown, editor of the R. I. Medical Journal, called attention to the value and importance of book-reviews through which the Library is enriched by the books offered by publishing houses for review, and called attention to the too frequent failure of the reviewers to return the books to the Society and to make a review of the books.

The following program was then presented:

1. "Neurological Contacts with Other Fields of Medicine," Dr. Harvey B. Sanborn, Providence, R. I. Discussion opened by Dr. William Newton Hughes.

2. "Personality Make-up of the Individual in Sickness," Dr. Charles A. McDonald, Providence, R. I. Discussion opened by Dr. Alex. M. Burgess.

3. "Newer Aspects of the Problem of Mental Deficiency," as seen in the study of 12,000 Retarded School Children. Lantern slide illustration. Dr. Neil A. Bayton of the Massachusetts Department of Mental Diseases. Discussion opened by Dr. Joseph H. Ladd.

Collation was served and the meeting adjourned.

Respectfully submitted,

J. W. Leech, M.D.
Secretary

Providence Medical Association

(Providence District Society)

The regular monthly meeting of the Providence Medical Association was held at the Medical Library, 106 Francis Street, Monday evening, December 3, 1928, at 8:45 o'clock, with the following program:

Symposium on Peptic Ulcer. 1. Gastric and Duodenal Ulcer Clinically Considered, Dr. Louis M. Gompertz, Assistant Clinical Professor of Gastro-enterology, Yale University. Discussion opened by Dr. Clinton S. Westcott. 2. Surgical Aspects of Gastric and Duodenal Ulcer, Dr. Theodore S. Moise, Assistant Professor of Surgery, Yale University. Discussion opened by Dr. Frank E. McEvoy.

The Standing Committee approved the applications of Dr. Robert Connery O'Neil and Dr. Herman Paul Grossman.

Collation followed.

Dr. Peter Pineo Chase
Secretary

The annual meeting of the Providence Medical Association was called to order by the President, Dr. Edward S. Brackett, Monday evening, January 7, 1929, at 9 o'clock.

The records of the last meeting were read and approved. The annual reports of the Secretary, Treasurer, Standing Committee and Reading Room Committee were presented and accepted. The President's annual address was read by Dr. Brackett, his subject being the projected hospital and health survey. Community development in our cities has been haphazard in the past, but of late years movements to systematize have arisen and this is the object of a health survey. There is an urgent need for a comprehensive health program based on ascertained facts to promote efficiency and ensure economy of energy and money. There is no body of ascertained facts from which can be deduced the health needs of the city or how efficiently the various health agencies are meeting those needs. A health survey would gather such a body of facts and formulate a program. Such a survey should be sponsored by an organization not directly engaged in health work but accustomed to consider all questions from a community viewpoint. It would be directed most effectively by an outside agency with a personnel trained and experienced in such work. It is essential that all organizations engaged in public health work give a health survey their enthusiastic and disinterested cooperation. If a health survey should be made in Providence the Providence Medical Association should give its hearty support both as a Society and as individuals. The Secretary was instructed to cast one ballot for the election of the following list of officers and committees for the ensuing year:

For President—Arthur H. Ruggles, M.D.

For Vice President — Clinton S. Westcott, M.D.

For Secretary—Peter Pineo Chase, M.D.

For Treasurer—Charles F. Deacon, M.D.

For Member of the Standing Committee for five years—Edward S. Brackett, M.D.

For Trustee of the Rhode Island Medical Library for one year—William B. Cutts, M.D.

For Reading Room Committee — George S. Mathews, M.D., Elihu Wing, M.D., Guy W. Wells, M.D.

For Delegates to the House of Delegates of the Rhode Island Medical Society—F. E. McEvoy, M.D., M. Adelman, M.D., C. W. Skelton, M.D., J. W. Sweeney, M.D., W. Pickles, M.D., G. H. Crooker, M.D., E. M. Porter, M.D., H. McCusker, M.D., A. Corvese, M.D., P. C. Cook, M.D., R. S. Wilcox, M.D., P. Appleton, M.D., A. A. Barrows, M.D., W. S. Streker, M.D., C. F. Gormley, M.D., P. P. Chase, M.D.

For Councillor for two years—Albert H. Miller, M.D.

After a few words from the retiring President he appointed Dr. Cutts and Dr. Robinson to escort Dr. Ruggles to the chair. The latter made a few remarks and then appointed as the new member of the Collation Committee Dr. C. C. Dustin and of the Publicity Committee Dr. Herman A. Winkler.

A circular from the Chamber of Commerce of St. Petersburg was called to the attention of the meeting and an obituary of Dr. James R. Morgan was read by the Secretary who was instructed to file it and send a copy to the family. The report of the Milk Commission of the Association was read and accepted.

It was voted to appropriate $200.00 for medical journals, $250.00 for binding journals and $450.00 for the use of the medical building. It was voted to make the dues for the ensuing year $5.00.

Dr. A. T. Jones presented a stone from the urinary bladder of a man who had symptoms for 22 years. The fragments of the one stone filled a good sized dish.

The meeting adjourned at 10:20 P. M. Attendance 41.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE, M.D.
Secretary



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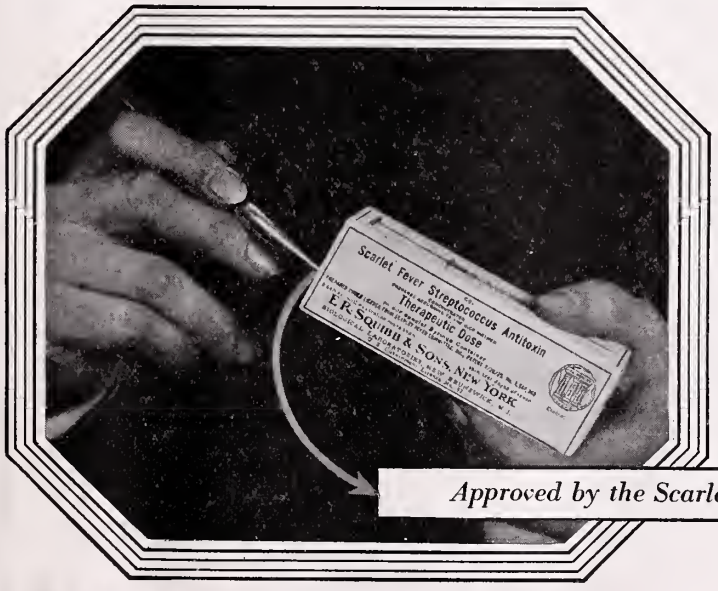
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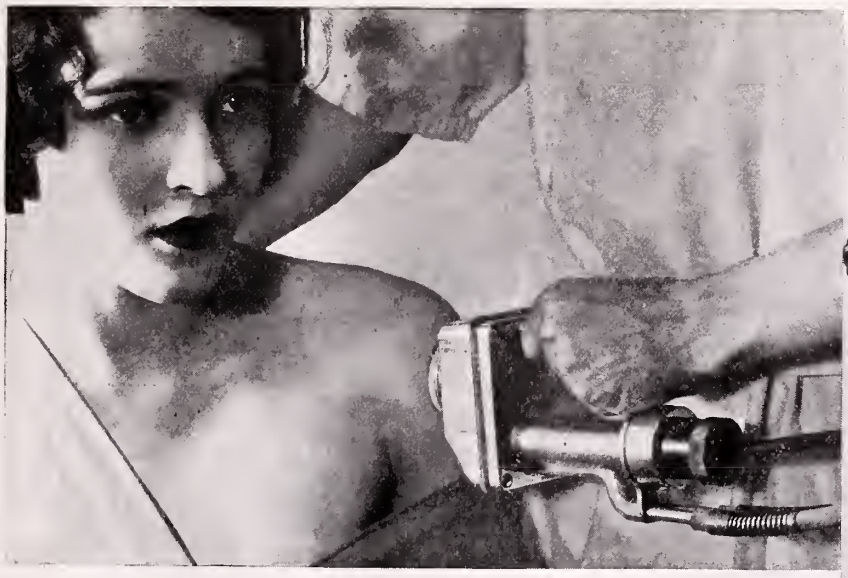
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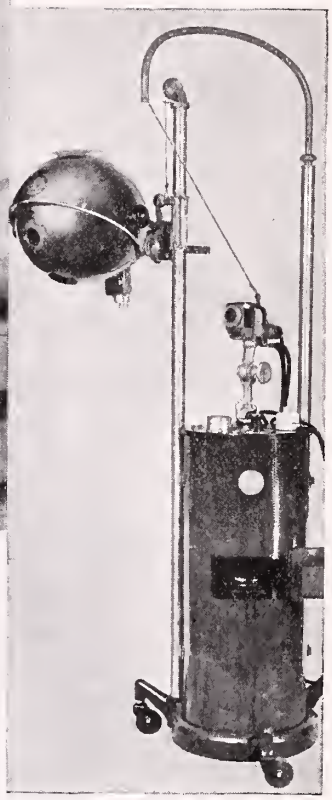
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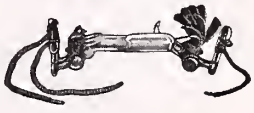
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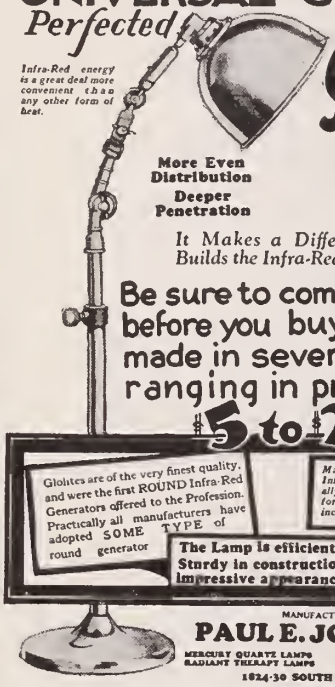
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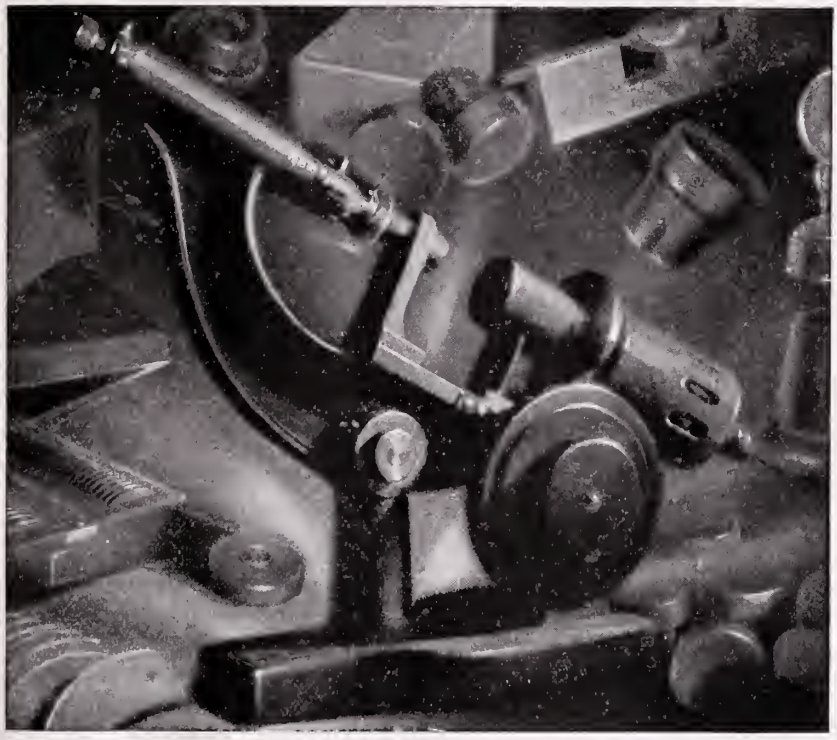
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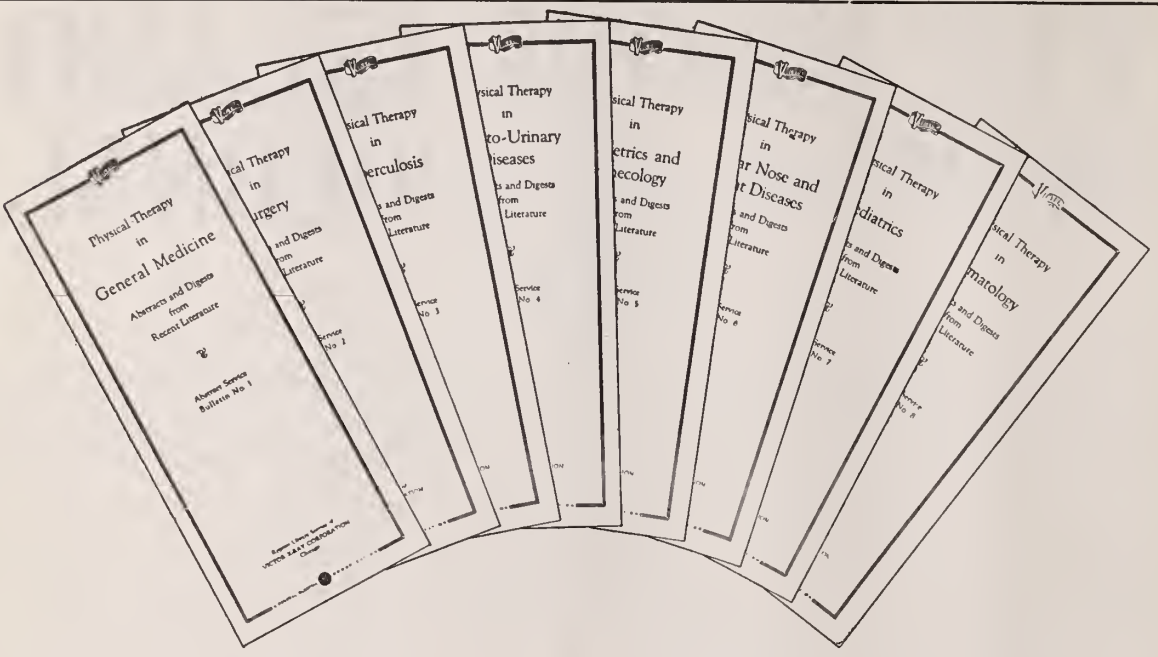
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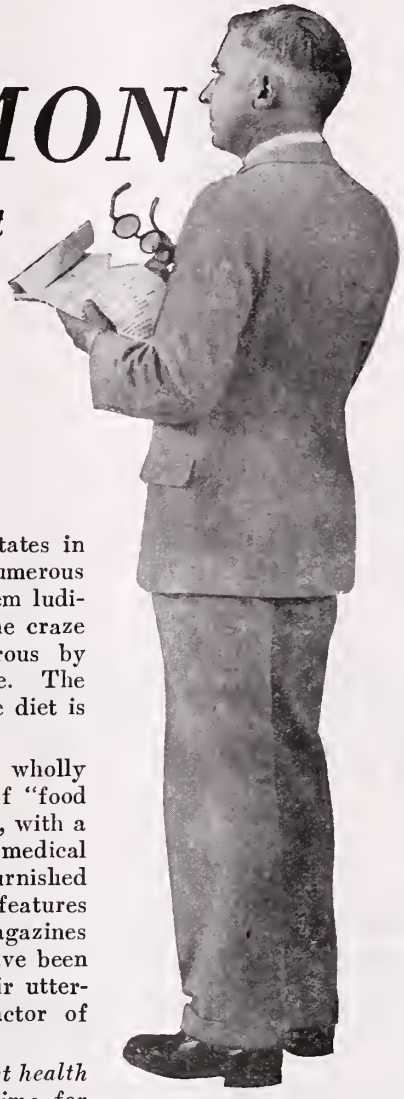
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DIETARY opinion in the United States in recent years has been swept by numerous nation-wide food fads, most of them ludicrous, many of them harmful. The craze for slimness, exposed as dangerous by many physicians, is an example. The fad for eliminating sugar from the diet is another.

Diet misinformation cannot be wholly blamed on the public. A swarm of "food extremists," laymen and laywomen, with a smattering of terms gleaned from medical and scientific publications, have furnished an endless supply of articles and features to the newspapers and popular magazines and radio. These "authorities" have been read and heard by millions. Their utterances have had the attention factor of sensational interest.

It is a dangerous policy to entrust health education to lay writers. It is time for medical and scientific authorities to eliminate the dangers of faddism with precepts of intelligence and common sense.

There are evidences that medical and scientific men are leading a swing toward sanity in diet. Twelve medical specialists and dieticians recently prepared a symposium exposing the dangers to men, women and girls of starvation diets and "reduction treatments," so called, for slimness.

"The most delicate parts of the body are always the ones to suffer first," says one of the medical specialists. "Keep children and young people well nourished and up to weight," says another.

Medical directors before an eastern tuberculosis conference recently warned of the dangers of under-dieting of young girls. "The most difficult problem," said one of the directors, "facing us in combating tuberculosis among high-school girls, and particularly among the young flappers of today, is the serious habits they practice to retain or acquire a slim and graceful figure. . . . The problem of nutrition is the one we have to face in our treatment of girls of this age. It is at this age that girls are most susceptible to tuberculosis and other diseases."

A research food biologist, at one of the great universities, recently said: "Sugar is a carrier for roughage in the diet — mineral salts, mineral ash, and fruit vitamins. Sugar modifies the harsh fruit acids and makes the fruits palatable. It does not injure or change in any way the delicate compounds. At least 90% of constipation is due to a lack of roughage. Eat bran, fruits and vegetables sweetened to taste."

The ranking biological chemist at another great university recently said: "Sugar is nature's incomparable flavoring agent. Sugar is one thing that relieves the deadly dullness of our overly refined foods. Also, sugar is wholesome and the most inexpensive condimental food in the world."

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ORIGINAL ARTICLES

INTRASPINAL ANESTHESIA*

by

MEYER SAKLAD, M.D.
PROVIDENCE, R. I.

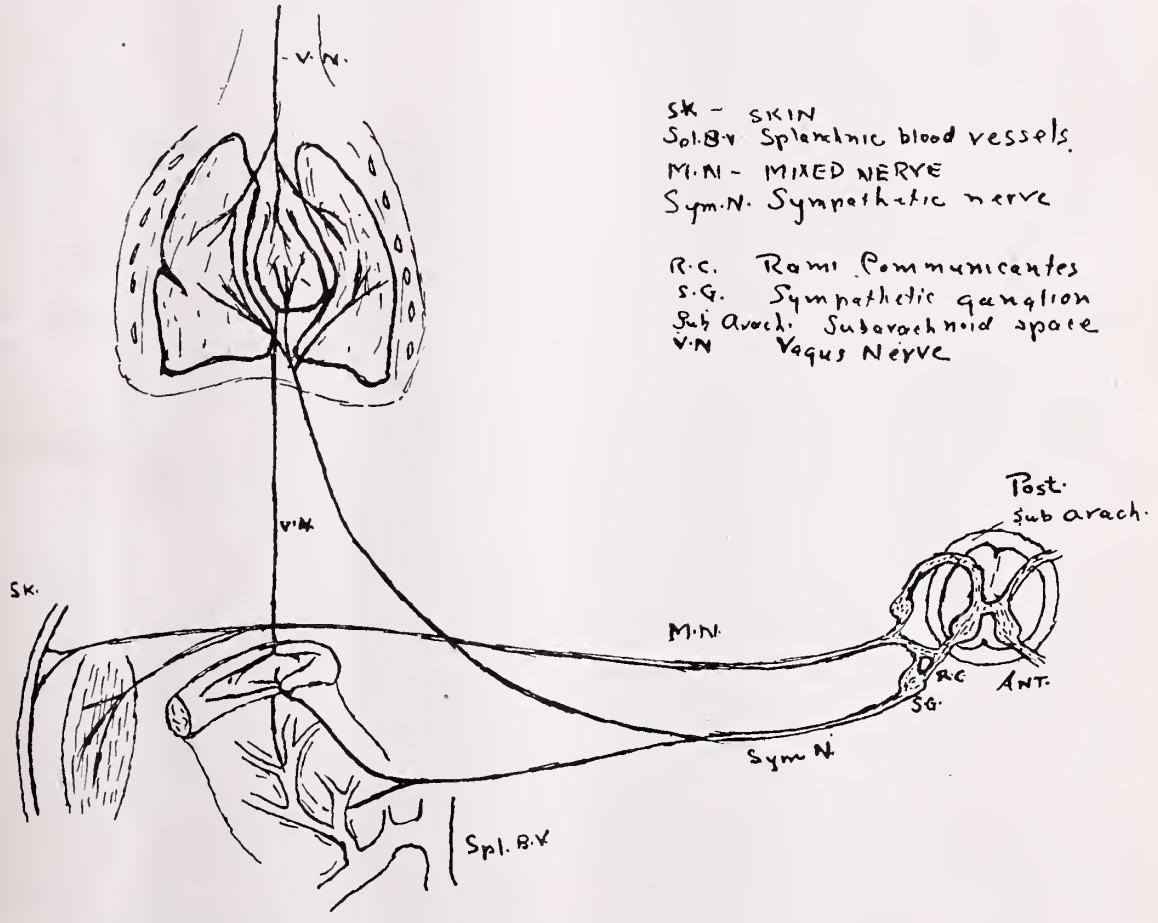
Intraspinal anesthesia is a nerve block produced by the introduction of an anesthetic solution within the subarachnoid space. It is also known as spinal anesthesia and subarachnoid anesthesia.

This type or anesthesia was first suggested by Corning in 1885. Bier was the first to recognize its value in surgery. He discontinued its use because of the effects of cocaine, which he used as the anesthetic agent. The discovery of novocaine in 1904 gave intraspinal anesthesia its greatest impetus.

Intraspinal anesthesia has one great danger—the fall in blood pressure. This fall occurs often and may become serious if no measures are taken to prevent or treat it.

With this in mind, it seems best to first reacquaint ourselves with the anatomy and physiology of the area involved so that we can better understand the mechanism of this fall in blood pressure, its prevention, and treatment.

There are two sources of innervation to the thoracic and abdominal organs—the sympathetic system and the vagus nerve. The actions of the sympathetic system and the vagus nerve are an-



*Read before the Providence Medical Association, November 5, 1928.

tagonistic. The sympathetic nerves and plexuses arise from the sympathetic ganglia. Carried to the sympathetic ganglia by rami-communicantes are vaso-constrictor fibres to the splanchnic area. The sympathetic system acts as an accelerator to the thoracic organs and depressor to the gastro-intestinal tract. The vagus nerve is the counterbalance to the sympathetic system and its action is antagonistic to it. It is, therefore, depressor to the thoracic organs and an accelerator to the gastro-intestinal tract.

Let us now see what happens if an anesthetic solution is placed within the subarachnoid space. The solution acts as a dye and penetrates both the anterior and posterior roots, thus abolishing all pain. It blocks all outgoing motor stimuli at the anterior root, thus bringing about paralysis of the muscles supplied by that nerve, resulting in relaxation of that muscle. An important consideration here is that since it blocks all impulses at the motor root it also blocks impulses thru the rami-communicantes carrying vaso-constrictor fibres. The impulses thru the vaso-constrictor fibres being blocked, the result is a vaso-dilatation of the vessels in the splanchnic area supplied by these fibres. These blood vessels with their lost tonicity take up blood from the general circulation at the expense of the blood vessels whose tonicity has not been effected by the anesthesia. This then accounts for the fall in blood pressure. It is also seen that the higher the anesthesia the greater the number of vaso-constrictor fibres involved and the greater the fall in blood pressure.

The sympathetic system itself being paralyzed its accelerator action is gone and the depressing action of the vagus predominates. The result is a slowly beating heart and a diminished respiratory rate. In the abdomen with the depressing action of the splanchnics not functioning the accelerator action of the vagus predominates and we have an increase in peristalsis. This is the clinical picture of a patient under intraspinal anesthesia.

We have now to consider the danger of a marked drop in blood pressure. The blood vessels of the brain are terminal. They do not anastamose. They have very little muscular structure and very little external tissue support. If the fall in blood pressure is great the volume of blood is small and a collapse of these vessels is likely. A collapse of these vessels results in cerebral anemia. It is this accident that is responsible for the deaths that have occurred under intraspinal anesthesia.

This danger is prevented by using one of two procedures. Labat recommends the use of the Trendelenberg position. In this position, the cerebral blood vessels are kept distended by gravity. The other is the hypodermic injection of ephedrine. Ephedrine is used because of its vaso-constrictor action and maintains the blood pressure at or near its normal level.

The patient is prepared as for a general anesthesia. The ether breakfast and cleansing enema are given routinely. The cleansing enema is important since hyperperistalsis exists during spinal anesthesia and a bowel evacuation may occur unless this enema is given preoperatively.

Morphia gr. 1/6-hyoscine gr. 1/300 is used as a preoperative medication. If the patient is very nervous or apprehensive a smaller dose one hour and repeated one-half hour before operation will be found valuable.

Novocaine is used as the anesthetic agent. It is the least toxic and therefore the safest.

Three types of solutions are recommended. Labat uses novocaine crystals dissolved in spinal fluid obtaining a solution isotonic with the spinal fluid. Pitkin recommends the use of a viscid solution of a lighter specific gravity than spinal fluid. Hepburn suggests novocaine in 5% glucose resulting in a solution much heavier than spinal fluid.

In using the Labat technique, the patient is seated across the operating table, feet resting on a stool, arms folded, and back arched.

The patient is steadied in this position by a nurse who stands in front of him. The back is painted with iodine and draped with towels. The site of injection depends on the operation intended. For operation on the lower extremeties or perineum injection is made between the third and fourth lumbar spines, for lower abdominal operations between the second and third, and for upper abdominal operations between the first and second. The site of injection is infiltrated with one-half of one per cent novocaine.

The lumbar puncture needle should be unbreakable, of medium gauge and should have a short bevel. The needle should be held firmly and inserted in the midline midway between two spinous processes and perpendicular to the skin. The needle should be advanced slowly until the sensa-

tion of a click is imparted to the fingers. This click is caused by the puncture of the dura. The stylet is removed and the flow of spinal fluid confirms the location of the needle.

It is sometimes difficult to enter the spinal canal. The reason for this is that the "u" shaped hiatus is small. In people with arthritic disease it is sometimes bridged over. If the hiatus is small, and no success is had with the usual technique it is wise to partially withdraw the needle and introduce at a slight upward angle, gradually increasing the angle till entrance is obtained. Even with this procedure failures occur.

Spinal fluid is allowed to run into an ampule of sterile and accurately weighed novocaine crystals, the neck of which has been previously filed off. The crystals are allowed to dissolve. The solution is then aspirated into a syringe, the air expelled, and the syringe attached to the needle. Gentle aspiration is made to redetermine the location of the needle. One-half of the contents are gently injected and gentle aspiration again made. The entire solution is now slowly injected. The syringe and needle are removed together by one quick pull. The patient is placed on his back and the table tipped into moderate Trendelenberg.

Dr. Shaw will discuss Pitkin's solution and its technique.

In using the novocaine and glucose solution injection is made with the patient on his side, back flexed and knees brought up. Injection may be made in any of the lower interspaces. Lumbar puncture is made in the usual manner and the novocaine glucose solution injected. The patient is then quickly turned onto his back. His head is flexed on to the chest and table tilted to about 15 degrees Trendelenberg and there kept for about 25 to 30 seconds. The table is then turned flat. This solution is a dangerous one to use since the patient cannot be kept in Trendelenberg position. Placing the patient into Trendelenberg position would subject the patient to the danger of respiratory paralysis. If used at all it should be only in the young with good circulatory systems after a large preliminary dose of ephedrine.

Intraspinal anesthesia usually lasts an hour and occasionally up to one and one-half hours. Blood pressure readings should be taken every five minutes during operation. If the blood pressure continues to fall the patient should be placed in a greater degree of Trendelenberg.

A moderate degree of nausea and vomiting may sometimes occur. This is due to the reverse peristalsis that sometimes takes place. This can usually be relieved by pinching the patient's nose and asking him to breathe through his mouth. It is wise not to allow the patient to hold his breath since this encourages vomiting.

In a series of 25 cases, 2 patients died. The first death occurred in a man 74 years old. A total prostatectomy under low spinal anesthesia was performed. He began with a blood pressure of 145/70. During operation it dropped to 115/60. At the end of the operation it had returned to 125/75. He stood his operation well and went back to bed in seemingly good condition. He died two days later of Anuria and Myocarditis. The other death occurred in a woman 76 years old. A cystotomy for fulguration of papilloma was performed. She began her operation with a blood pressure of 95/50. She did well for one-half hour, and then for a period of fifteen minutes her blood pressure could not be determined. In spite of this she looked fairly well. A subcutaneous injection of 15 minims of adrenalin was given. Her blood pressure picked up. Her operation ended with her blood pressure at 95/70 and a pulse of 110. She did well for 4 days and then became delirious and would not eat. She died 8 days after operation.

There was an average fall of 20 mm. in the systolic pressures. The greatest fall occurred in a man during perineal prostatectomy. The blood pressure fell from 145/90 to 65/45. The operation ended with his blood pressure at 120/75. He did nicely and was discharged well. There were 6 cases in which the blood pressure did not fall at all.

Two cases, both in very nervous women who had a hysterectomy performed, were finished with nitrous oxide. One went for 50 minutes complained of no pain but had a dull stomach ache. The other complained of cramps after 30 minutes operating.

Two patients vomited on the table. In both cases it was slight.

One man retained motor function in his legs but had no abdominal pain. He did well until after his appendix was exposed. It was very much tied down and in freeing it up he began to strain and it was necessary to give him gas ether.

In this series were:

7 prostatectomies
8 appendectomies
3 inguinal herniorraphy
1 repair strangulated inguinal hernia
1 repair of hydrocele
2 hysterectomies, finished with N20
2 cystotomies
1 repair perforated duodinal ulcer

Intranspinal anesthesia gives us the relaxation equal to that of ether anesthesia without the pulmonary irritation. It is definitely indicated when operative interference is required in patients suffering from pulmonary conditions as tuberculosis, bronchitis, or asthma.

Acidosis occurs less frequently after spinal anesthesia than after ether anesthesia. Because of the hyperperistalsis that exists during spinal anesthesia gas distension and paralytic ileus are rarely encountered. Heart action and respiratory rate remain at or near their normal level.

How can it be compared with infiltration, field block, and paravetebral anesthesia? In none of these is the relaxation as definite or complete as that in intraspinal anesthesia. None of these produce the contracted intestine with the splanchnic anesthesia allowing for handling and manipulation of abdominal contents.

In conclusion, intraspinal anesthesia is a procedure of definite value. It is associated with one danger—the fall in blood pressure. Death under intraspinal anesthesia is the result of cerebral anemia. This accident can be prevented by the use of ephedrine and the Trendelenberg position. The Trendelenberg position is the more dependable. This type of anesthesia should not be limited alone to the poor risk. It lays no stress on the vital organs. Patients should be carefully prepared, and blood pressure readings taken at regular intervals during operation.

HAY FEVER IN NEW ENGLAND

by

Jay N. Fishbein, M.D.
Providence, R. I.

Hay fever or rose cold has been known to the profession since 1565. It was not, however, until 1873 that Blackley revealed the cause as due to the specific action of pollen of plants. Curtis, in 1900, was the first to attempt to produce active immunity by using extracts of the whole plant, and a few years later Dunbar, by his exhaustive research, opened the way to a new method of treatment founded upon immunology. He isolated from the pollen what he thought to be a true toxin, but later investigation established the fact that the active substances of the pollens are proteins with active antigenic properties. The work of these men and its significance cannot be overestimated. The importance of hay fever can be realized when it is known that 1% of the entire population of the country is affected with this disease. This malady is sufficiently incapacitating in itself, but when we find that 65% of these eventually become asthmatic, the condition assumes even greater significance. It occurs in those regions in which plants rich in pollen flourish, but only when they have reached the flowering stage. The condition is one of hypersentiveness to these pollen proteins, and is induced primarily by the inhalation of these wind-borne pollen and only pollen inhaled during normal respiration causing hay fever.

In New England, there are three hay fever seasons.

1. Middle of March to the middle or last of May. This is usually due to the pollen of trees.
2. Middle or late May to the middle of July. This is due to the pollen of grasses.

(1) The first period extends from the middle of May to the middle of June and is due largely to the pollen of June and orchard grasses.

(2) The second period begins about the middle of June to the middle of July and is due to the pollen of timothy and redtop.

3. From early in August to the middle of September and is definitely closed by the first killing frost. This is due to the pollen of the ragweed. The symptoms of the three types are similar except as to the severity; the tree pollen producing the mildest symptoms and the ragweed causing the most severe reactions.

In the New England States we have the following grasses:

Grasses	*Hay Fever Season*
Black Walnut	March to May
Cottonwood	March to May
Oak	March to May
Sweet Vernal Grass	April to July
Orchard Grass	April to August
Sheep Sorrel	May to July

Yellow Dock	May to July
June Grass	May to September
Timothy	June to August
Redtop	June to September
Lambs Quarters	June to September
Cocklebur	July to September
Ragweed	August to October
Giant Ragweed	August to October

It is characteristic of hay fever grasses that they thrive only in open and sunny spaces.

Causes of Hay Fever

It is generally accepted that the symptoms of hay fever are caused primarily by wind-borne pollen and that these are so widely distributed that the mucous membrane of every person comes in contact with them, yet only those sensitized show the symptoms. This consideration at once eliminates all insect pollenated plants and the heavy viscid pollen and those that are not shed in abundance or which are not indigenous to the locality in which the patient experiences his symptoms. While there are many flowers and plants whose pollen will cause hay fever symptoms when directly inhaled, yet it is only the floating pollen that can reach the nostrils in the course of normal respiration that are responsible for true hay fever. The wind pollenated plants can be easily recognized from the insect pollenated plants, generally speaking, the former being distinguished by their inconspicuous flowers, devoid of scent or odor. Their pollen are very abundant, are light and buoyant and may be carried by the wind for miles. Scheppegral, in his pollen plate studies, made in an airplane, found that the pollen in the air was carried to an altitude of over 5000 feet and is almost as abundant as it is near the ground and that it can easily be carried for a distance of over 15 miles.

The insect pollenated plants are very highly colored, having a sweet scent and other characteristics tending to make them conspicuous. In order to attract the insects and ensure their fertilization, nature has made them attractive through brilliant color, fragrance, or nectar. The pollen of these plants are heavy and viscid and are shed very sparingly, as fertilization being direct less are needed. These plants are of importance in the production of hay fever only when grown in great profusion in close contact to the patient or used for decorative purposes in the home, or if directly inhaled. These pollen are never found in the air in any great quantity. The symptoms, if they occur, are of short duration.

Just what causes the sensitiveness to the hay fever pollen is not known. Some believe it to be largely due to a lowered adrenal function. Underlying causes are nasal or nasopharyngeal disease or obstruction. There also exists a definite hereditary allergic sensitiveness in certain families.

Spring hay fever has often been designated as rose fever or rose cold, as it was believed to be due to rose pollen. This is erroneous as roses produce but little pollen and these are not buoyant. This spring type is invariably due to the pollen of the grasses. Similarly fall hay fever, popularly attributed to the pollen of the golden-rod is caused in the majority of cases to the ragweed. The pollen of corn, wheat, rye and oats while toxic are not important in the production of hay fever due to their being large and heavy so that they cannot travel far.

The hay fever of the first season need scarcely be mentioned as it is generally mild and of short duration, occurring during the flowering of such trees as elm, oak, poplar, birch, maple, walnut and willow. In general, it may be said of trees as with flowers, that those having blossoms that are showy, sweet scented, or otherwise atractive, shed so little pollen that they need not be seriously considered as factors in the production of hay fever.

Perennial Hay Fever or Non-Seasonal Hay Fever

This is not due to pollens and is not as easily recognized, being more often diagnosed as a primary nasal condition. Although there is considerable to be said on the subject, it will be mentioned here briefly, mentioning it merely to prevent its confusion with the seasonal type. The symptoms are typical hay fever symptoms occurring at times other than those established as hay fever seasons. The difficulty in recognizing these cases in being of allergic origin arises from the fact that the symptoms may be mild and of short duration, or in cases of longer duration lacking the prolonged explosive sneezing.

The allergic substance in this type are as a rule air borne substances, as animal emanations, vegetable powders and dusts. The animal emanations include the impalpable dust of feathers, the dander

of the horse, cat or dog. Rabbit and goat hair which are frequently used for bedding, in stuffing cushions, furniture, etc. Occasionally, face and talcum powders, containing rice powder or corn starch, may be causative factors. By cutaneous tests it is possible in many instances to determine which of these components is responsible for the symptoms. Occasionally, identical symptoms can be produced by ingestion. In the seasonal cases it is well to bear in mind that there are seasonal foods as well as pollen. The two may even be combined. There are definite cases of "hay fever" who find that their symptoms are aggravated by eating certain foods. It is these various combinations that are the most puzzling from a diagnostic viewpoint. They are usually diagnosed as ordinary colds. When such "colds" are afebrile, allergy should be suspected. The symptoms are fullness in the nose, a copious discharge and paroxysmal sneezing.

Symptoms

Nasal Symptoms:—

There are attacks of sneezing which are frequently prolonged, accompanied sometimes by a constant profuse discharge, nasal obstruction and headache. The appearance of the nasal mucosa falls into two classes. In the first type the nasal mucosa is reddened and considerably swollen, with an increased secretion of serum and mucus, associated with attacks of sneezing, in appearance it resembles an ordinary acute rhinitis. The second type has the characteristic appearance seen in the seasonal or perennial hay fevers. The redness is replaced by a marked pallor which may disappear between the acute attacks. The edema is also marked but it is not as constant as in the first type. The discharge of serum and mucus is practically constant. The distinguishing characteristic that places these cases definitely into the anaphylactic group is the pallor.

On examination of the nose we usually find obstruction from the edematous, pale mucous membrane. On spraying the nose with the 1% cocaine solution this turgescence is practically unaffected, nor does the topical application of a 4% solution have the effect comparable with cases of the non-anaphylactic type. In many of the cases particularly in the perennial type, polyps are present due to the degenerative changes occurring in the mucosa. Often the practitioner finding this condition of hyperplastic ethmoiditis and believing that he has found the cause will confidently assure the patient that removing the polyps will clear up the symptoms, only to find them as bad as before, with the polypoid condition recurring in a short time. Headache occurring in these cases is rarely due to allergy primarily. It is usually of the frontal type, due to the general edema blocking the frontal sinus with the production of the "vacuum headaches".

Sinus disease either hyperplastic or suppurative is common, occurring in about a quarter of the cases. These are as a rule the result rather than the cause of the condition. In the hyperplastic type it is merely a continuation of the edematous condition present in the nose being aggravated in the acute attacks by interfering with the blood supply. This edema causing a mechanical obstruction of the sinus ostia with subsequent lack of drainage and poor blood supply rendering the sinus a fertile field for infection when it does occur.

The maxillary sinus is usually the first one to be involved and where the changes are most marked, as the ostia is placed in a position least favorable for drainage, and accessory ostia if present would be occluded similarly by the same mechanical obstruction. A thing worth remembering in antrum conditions, particularly in the hyperplastic type is that a considerable degree of degeneration of the mucosa *can* take place and lavage of the antrum still be negative. In making these lavages for diagnostic purposes by means of the needle puncture beneath the inferior turbinate, it is advisable to use a dark colored basin, to catch the returning fluid as in the hyperplastic type the fluid is serous in color and quite clear, and would therefore escape detection in the white basin commonly used. Frequently, on operation, these maxillary sinuses show a polypoid degeneration far greater than one would have had reason to suspect, from the apparently negative washings. An X-Ray study is of unquestionable value in these cases.

Schadle, in 1906, advanced the theory that hay fever was due to antral disease and reported the cure of a number of cases by lavaging the sinus. The symptoms were similar to those of allergic origin. There is a serous discharge, nasal occlusion with sneezing which is often marked. This is due to bacterial infection of the maxillary antrum which results in a polypoid degeneration of

the mucosa without much change in the normal appearance of the nasal mucosa. This serves to illustrate that the bacterial proteins elaborated on the upper respiratory mucosa are as capable of producing the symptoms of "hay fever" as are the proteins of pollen.

There exists a great difference of opinion as to the role played by nasal infections and the sinuses in hypersentization. Schadle and others who relieved or cured certain cases by lavage of the maxillary sinus were quite convinced that they had discovered the cause of hypersensitivity. Other rhinologists who successfully treated other cases by the exenteration of the ethmoid cells, were just as firmly convinced that this was the cause. Allergists, on the other hand, were quite as earnest in their belief that all cases were due to pollen proteins. It is obviously wrong to assume any one of these to be the sole cause to the exclusion of all other factors. Nasal conditions undoubtedly play a strong role as a cause of hypersensitization. Particularly is this true in those cases that do not show skin reactions to the protein tests.

There is present a viscious cycle which is difficult to cope with. The pollen tend to irritate the mucous membrane resulting in edema and tending to infection and polyp formation. This condition tends to keep the mucosa of the upper respiratory tract in a congested or irritable state. The result of this is a blocking of the ostia, with increased sinus congestion, interference with drainage, etc. This interference with drainage results in an aggravation of the condition, greater edema and blocking of the ostia, etc. keeping this viscious cycle active.

The above facts can be briefly summarized as follows:

In an individual that is predisposed by heredity to hypersensitization, allergic reactions in the mucous membrane of the upper respiratory tract may be excited by the absorption of bacterial proteins from paranasal sinus infections.

Abnormal conditions in the nose such as polyps, sinus infections, deflected septi, etc., may precipitate an attack and may also increase the hypersensitiveness of the individual, or may reduce his general vitality and resistance, thereby rendering desensitization methods practically or wholly ineffective.

A vicious cycle is established which tends to aggravate the symptoms and perpetuate the condition.

Orbital Symptoms:—There is conjunctival congestion with itching and puffiness of the lids to a varying degree accompanied by excessive lacrimation.

Aural Symptoms:—Occasionally, we may have tinnitus and vertigo simulating the Meniere complex, probably due to edema of the eustachian tube and tympanic mucosa.

Pharyngeal Symptoms:—Itching of the soft palate, uvula and pharynx may be present and edema of the parts in severe cases accompanied by cough.

Cutaneous Symptoms:—There may be itching varying in intensity from a simple pruritus and erythema to a dermatitis which however is usually confined to the exposed portions of the body—the hands, face and neck.

Diagnosis:—The diagnosis of hay fever of the seasonal type is not difficult when the patient exhibits the classical symptoms. It is characterized by swelling of the nasal mucous membrane accompanied by an itching with an excessive nasal secretion, lacrimation, conjunctivitis, and paroxysmal sneezing. Cough, general malaise and fever may occur in the more severe cases.

Often there is a history of other manifestations, as bronchial asthma, urticaria or eczema. A careful history is of great importance. In over 50% of real pollen hay fever, a positive family history can be elicited.

Before attempting treatment the physician should ascertain:

1. The exact date of onset and the duration of the patient's symptoms.
   (It varies slightly each year depending on the time pollenation begins.)
2. The pollen known to be prevalent in the patients locality at the time he has his symptoms.
3. The pollen to which he is susceptible and which were determined by the cutaneous tests.
4. What treatment he has already had.
5. By careful examination (transillumination and X-Ray if necessary) determine whether there is any local condition contributing to the symptoms, such as deflected septum, polyps or sinus infection. Differentiation from other allergic diseases should be made. It is superfluous to test a patient for pollen not present in his vicinity, for

patients may exhibit skin reactions to pollen to which they are not exposed. Also pollen which are not present in the air as it is only the pollen which reach the nasal mucous membrane in the course of normal respiration that are responsible for true hay fever. Duke says that the plants producing the greatest amounts of pollen over the longest season, are those causing the greatest amount of hay fever. The fact that true hay fever is caused by the inhalation of wind borne pollen only, exclude from consideration a long list of insect pollenated plants and trees, as these are never present in the atmosphere in sufficient amounts to reach the nostrils in the course of normal respiration. Other important factors of the pollen are their toxicity, buoyancy and ability to cause mechanical irritation.

The Technique of Doing Skin Tests:—The test which has been found to be the most reliable and is most extensively used, is the cutaneous test. This is performed by cleansing the forearm with alcohol, or ether and allowing to dry. The pollen diagnostic material is placed on the arm and with a sterile needle almost parallel with the skin, a few shallow punctures are made through the material not deep enough to draw blood. Each scarification should be made separately about two inches apart, using a separate needle. Four or five pricks are sufficient to carry the pollen extracts into the deeper layers of the skin.

The dry powdered form may be applied to scarified areas on the skin and to this is added a drop of 1/10 normal NaOH solution. Care should be used to prevent contamination of the areas of the arm reserved for other pollen diagnostics. Using a prearranged order will avoid confusing the skin tests.

The cutaneous reactions usually appear in sensitive individuals in about ten minutes, reaching the height of their reaction in from twenty to thirty minutes. These positive reactions consist of urticarial wheals surrounded by a zone of erythema. These wheals when they begin to form are characterized by pseudopodia which usually coalesce. Pseudo-reactions may be confusing but these are usually quite regular and circumscribed and never show pseudopodia. Where the pollen produces a maximum reaction there is no difficulty of interpretation. The larger and more irregular the wheal, the greater is the sensitiveness of the patient to that particular pollen, and it is to that pollen that the attention should be directed.

Too much reliance should not be placed on these cutaneous tests. Nothing is more erroneous than the view commonly held that every case can be diagnosed and cured by the use of them. The skin may show positive reactions to a number of substances and yet have sufficient tolerance to show no clinical symptoms.

Treatment:—Preseasonal pollen desensitization is one of the most successful methods of treatment we have. There are few conditions present today in which the procedures carried out in treatment are so markedly different in the hands of the various physicians as in hay fever. There are many physicians, each with his own system and which is successful in his own hands. All of them, however, have several points in common. They all make use of pollen extracts of increasing strengths and most of them begin with small doses, gradually increasing the strength of the dose.

The object of the pollen treatment of hay fever is to produce a definite tolerance or desentization to the pollen protein to the extent that the patient can tolerate the air during the pollenating season of the plant. In a few cases the phophylactic treatment with the pollen extract will fail to establish complete desensitization and these cases will not be fully protected during the season and will manifest the symptoms to a greater or lesser degree. The attack, however, will be of lesser severity and may be delayed beyond the usual date of onset. In these cases, it is best to continue with the treatment increasing the injections gradually, until there is complete alleviation of the symptoms.

Desentization in hay fever is not permanent or stable. Freedom from hay fever symptoms lasting only as long as the antigen remains in combination with the tissue antibodies. The usual period of tolerance to pollen protein is probably about six weeks after the completion of treatment with the pollen antigen. From then on, there is a gradually diminishing degree of tolerance. It is therefore essential that the pollen antigen be administered annually and not too early as the tolerance may be lost before the hay fever season begins. Frequently, there are conflicting reports with the same methods of treatment. This is due in part to the weather conditions and to the pre-

valence of the pollen. Any one of a number of factors enter into the consideration and for that reason identical therapy will give varying results with he same physicians using the same technique.

The two methods of pre-seasonal treatment in use at present are:

I. The Long Interval Method.

II. The Intensive Method.

The long interval method which was the first in use has yielded some very gratifying results. Treatment is begun about two months before the season begins, and ends with the beginning of pollenation. The initial dose is determined by determining the dilution of the offending pollen which will just give a positive skin reaction and making the dose .1 or .2 c.c. of the next higher dilution; in other words the strongest solution that does not give a skin reaction. The injections are given at about five day intervals. Individuals vary greatly in their response to pollen therapy and the dosage and interval between doses will necessarily vary in different cases. Certain features are similar in all forms of treatment, namely that the patient should receive treatment in doses of increasing strength which should be just as strong as he will tolerate without showing an annoying reaction. A dose should never be given while a patient is still showing evidence of a local reaction from the preceding one.

The intensive interval method is advocated by Duke, of Kansas City. Treatment is begun about two weeks before the hay fever season begins. The importance does not lie particularly in the time consumed in treatment, but the fact that with a graduated series of doses given at regular intervals until the time when the pollen appears in the air in toxic quantities, the patient is receiving doses of such concentration as to nearly equal his limit of tolerance. Duke begins about two weeks before the hay fever season begins, using a small dose and doubling at each innoculation until the stronger dilutions are reached. With the smaller doses injection can be given twice daily at twelve hour intervals. The stronger dilutions are given at twenty-four hour intervals unless marked local reaction occurs in which case the remaining doses of the series are spread out in two of three day intervals. This method of treatment is frequently preferred by the patient to the long interval method on account of convenience and the fact that tolerance is more rapidly secured. Those patients who are not entirely relieved of their symptoms should continue treatment through the season, by supplemental doses of the highest pollen units at five or six day intervals. These additional doses give the patient the maximum protection at the time that the hay fever plants are pollenating. It is advisable to have patients receiving pollen treatment carry a few of the 3/8 grain capsules of ephedrine hydrochloride in the event of untoward symptoms appearing. While the action of this is slower than adrenaline it has the advantage of oral administration.

Co-Seasonal Treatment

While the pre-seasonal method of treatment has been found to be the most effective, nevertheless, many patients will not present themselves until the actual attack has begun. Greater care is required in the treatment of the attack, for it must be borne in mind that the patient is already absorbing pollen from the atmosphere and the initial dose must be small, increasing it with caution. Using a large dose aggravates the condition and the symptoms become worse. The dose is progressively increased and as many given as may be needed to control the attack. The doses may be given daily for the first few times, or until a local or systemic reaction is produced, and then every two or three days. It may be necessary to give the full course of treatment before the symptoms entirely disappear, in some cases. Usually, they are benefited after receiving about four injections with complete cessation of the symptoms after the eighth or ninth dose.

For greater accuracy in determining the dose that the patient will tolerate, the following test can be performed. A few scarifications are made on the forearm as previously described. On one of the scarifications rub in some 1-100,000 dilution (10 unit per c. c. extract) on another scarification some 1-10,000 dilution (100 units per c. c.). Should both tests show a reaction begin with the 1-500,000 dilution. Should only one show a reaction, begin with the higher dilution. Should neither show a reaction begin with a solution of greater concentration. The reactions should begin to subside in 24 hours.

Hay fever resorts which have long been in vogue are losing their popularity. This previous popularity has been the greatest factor in their failure. The resorts that were located in woods comparatively free of hay fever grasses were turned into luxurious hotels with the subsequent clearing and cultivation of the grounds which resulted in a proliferation of weeds that defeated the purpose they were intended to serve.

Protein Reactions:—Occasionally a patient may be found to be unusually sensitive to pollen protein, so that in the course of the pollen treatment some dose may produce a severe constitutional reaction. Further treatment should be stopped until the reaction subsides. They are rarely serious but are very alarming to the patient. The reactions can be controlled by the hypodermic injection of 1 cc of adrenaline hydrochloride solution (1-1000). Atropine Sulphate gr. 1/100 may also be administered hypodermically to stimulate respiration. All clothing should be loosened,

especially about the chest and neck. An injection of pollen protein should never be given without having a solution of adernaline hydrochloride on hand. The patient should not be allowed to leave the office until a half hour has elapsed following the protein injection. Should symptoms of reaction occur, such as sneezing, itching of the eyes or skin or difficult respiration, 5 minims of adrenaline hydrochloride should be given hypodermically and repeated if necessary. Small doses will be just as effective as larger ones if given early. With the occurrence of a constitutional reaction the remaining treatment should be given in fractional doses and it may be necessary or advisable to combine with it about 4 or 5 minims of adrenaline. Treatment should be stopped until any local reaction from the previous dose has disappeared. Should the treatment be stopped for over a week for many reasons it is always advisable to begin treatment again with small doses to avoid an anaphylactic reaction.

Surgery in the treatment of Hay Fever:—Surgery on the whole is strongly to be condemned as a means of treatment in this condition. That the condition of the nose is an important factor in the production of hay fever cannot be denied. The question arises as to the advisability of correcting abnormal nasal conditions. The following have been considered of etiological importance the sinuses, polyps, deflected septa, spurs, etc. The importance of these has been greatly overestimated by certain allergists. At one time, it was firmly believed that an ethmoidectomy would cure hay fever or asthma and some rhinologists still hold this view. The results on the whole have been unsatisfactory and it is only the rare case that has given even temporary relief. In hay fever, there is a tendency to edema of the membranes and polyp formation and their removal frequently leads to the formation of more polyps. These, by their obstruction to the aeration and ventilation of the sinuses, lead to sinusitis, which, in their turn, causes an increased edema and polyp formation with the establishment of a viscious cycle. Operative work should, under no circumstances, be performed during the course of an attack. These patients do not have the tendency to healing and recovery of membrane structure that is possessed by normal individuals. Myer-Solis Cohen believes that all cases operated upon should have a course of autogenous vaccine treatment. Frequently vaccine treatment which failed before operation—before the foci were removed, show good results if given following the operation.

Summarizing briefly:—Pollenosis is primarily a constitutional disease in which the patients' tissues are generally sensitive to the particular pollens that causes the symptoms. Nasal localization is sometimes a resultant of the systemic reaction. In pollenosis, there are often two or more causative factors which must often be taken into consideration in the treatment of the patients. One of the factors may be termed as predisposing, the other exciting. Usually, the predisposing factor is specific, while the exciting cause may or may not be. Also the exciting cause may exert its action either locally or constitutionally. Such a non-specific provocative cause usually would not produce the symptoms if a specific constitutional predisposition did not exist at the same time. The localization of the reaction in the nose may be due in part to a specific sensitization of the nasal mucosa. The factor deciding nasal localization may equally be non-specific, such as mechanical irritation in the nose.

In a person with pollenosis there may be a co-existant sensitization to some protein which would not cause the symptoms of hay fever, but the reaction to which superimposed upon the pollen reaction, enhances the manifestations of the latter. MacKenzie advocated the preseasonal desensitization with nasal sprays containing concentrations of the specific pollen. This is good treatment given with the usual preseasonal hypodermic injections. There are cases of local sensitization affecting only the nasal mucous membrane or conjunctiva and yet giving a negative skin reaction to the pollen.

It may be possible as suggested by Bernton that one may be sensitive to only one of the constitutional proteins of the pollen. He found that just as one may give a negative reaction to the whole wheat protein and a positive reaction to one of the constituent wheat proteins, so one may give a negative reaction to the usual pollen protein, but a strongly positive one to one of the fractionations. Non specific irritation increases the local symptoms. The pollen besides its specific properties is an actual mechanical irritant. One may be sensitive to several proteins, maintaining however an allerging equilibrium when in contact with only one, but showing the symptoms when coming in contact with two or more.

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Roy McLoughlin, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

BLOOD CHEMISTRY

Present interest in the bio-chemical examination of the blood dates from the publication of Folin's work in 1912. Blood chemistry is still a new feature in medical experience and is subject to the abuses which new methods must undergo. By colorimetric analysis, the non-protein nitrogen, urea nitrogen, uric acid, creatine, creatinine, cholesterin, bilirubin, chlorides, phosphates, calcium, dextrose, diastatic activity, and carbon dioxid combining power of the blood may be closely estimated. The tests for urea nitrogen, uric acid, creatinine, dextrose, and for the carbon dioxid combining power are of special interest. Two factors determine the value of these tests:—the accuracy of the technician who makes the tests and the judgment of the clinician who interprets them. The frequently heard statement that "the blood chemistry is normal" may mean nothing to the spokesman or to the hearer and is then of doubtful value to the patient. Precise knowledge of the number of milligrams of urea nitrogen per 100 C. C. of blood, perhaps supported by knowl-

edge of the amount of uric acid and creatinine present, favors an exact prognosis of renal efficiency. Knowledge of the proportion of blood sugar present is of inestimable value in the diagnosis and treatment of diabetis. The carbon dioxid combining power of the blood furnishes an accurate index to the presence and degree of acid intoxication. With a proper appreciation of the difficulty, expense, and value of chemical examination of the blood, we can order the test indicated by the patient's condition, assure ourselves that the technician is competent to make the test accurately, and state the result in the figures then available, not contenting ourselves with the indefinite statement that "the blood chemistry is normal."

SPECIALISTS

One hears a great deal about "specialization" in the practice of medicine. Usually it is depracated by the public and a large number of the doctors and yet specialization seems to continue without abatement.

In the past, more frequently than now, physicians charged the X-ray with ruining the art of physical examination. No doubt the X-ray may have dulled some minds but it also improved some, and the X-ray has continued to increase in importance and usefulness long past its experimental stage. Its introduction merely substituted one form of examination for another and the better one remains.

It is possible that the trend toward specialization may be another advance that cannot be stopped. The general practitioner, as good as he is, never solved tuberculosis by telling the patient to "lie around for awhile." Nor did he do much for the diabetic by telling him not to eat pie or cake. It was the specialist who put these patients in the sanatorium or hospital on definite régimes, and, most important, it was the specialist who recognized the necessity of teaching the patient how to keep himself well.

Gradually, physicians are giving other diseases their sole attention and order and improvement in treatment will result. In the meantime, the trend toward specialization justifies itself and is likely to continue.

"NURSES, PATIENTS AND POCKETBOOKS"

This is a title of a book prepared by the Committee on Grading Schools for Nursing as a preliminary report. It contains much information that is interesting, showing that there is a big problem in the nursing situation.

Physicians are constantly hearing complaints from patients about the temperament and the financial sense of some nurses. The nurses also complain about the unjust demands of some patients and about the irregularity of employment.

The fact that complaints are heard from both sides indicates that there is something to be said on both sides. There are many nurses who enter the work with a true sense of service to humanity. There are some who see in it a means of financial freedom.

Much of the friction that has been engendered is undoubtedly due to the rapid growth in the nursing field. In 1880 there were 15 training schools for nurses, whereas in 1926 there were 2,155. These schools are turning out yearly about 20,000 new nurses to be added to the 200,000 already in practice. The proportion between the number of nurses and the number of physicians is rather striking. In 1900 there was approximately 1 nurse to every 10 physicians, whereas in 1926 the proportion was 15 nurses to every 10 physicians.

This tremendous growth has brought new problems that have not yet been solved. These growing pains are being studied now in a very thorough fashion, but until the Committee can give a final report that will formulate standards for grading the schools and suggest methods of supervision, the criticism levelled at this question should be constructive and kindly. Physicians should be particularly patient, as the profession has had its difficulties and is not yet entirely free from criticism.

OBITUARY

Dr. James H. Davenport

An Appreciation

Doctor James Henry Davenport was born in Fall River, March 17, 1862, and died in Providence at the Jane Brown Memorial Hospital, October 15, 1928. He graduated from Brown University in 1883. He studied medicine at the University of Vermont and at Harvard Medical School, received the degree of Doctor of Medicine from both, and was intern at the Rhode Island Hospital, 1885-1886, and at the Boston Lying-In Hospital 1887. He then returned to Providence, where he remained until his death.

As has happened with many young medical men with a considerable obstetrical experience, Doctor Davenport soon became interested in gynecology. After his return from Boston in 1887, he took up gynecological work with Doctor George W. Porter and the next year was appointed assistant surgeon, and later surgeon, to the department of gynecology at the Rhode Island Hospital, where he was actively connected with the department for over thirty years. He soon attained phenomenal success in his chosen field. That this was due far more to his sound judgment, his quick observation, and his ready and inventive mind, than to the teaching of his masters, will be readily admitted. He had unusual ability as a diagnostician, a prime requisite in surgery and was a rapid operator, both smooth and dexterous. His technical skill was unexcelled in the state and perhaps in New England. Though conservative in the trial of new things, he was quick to see and apply real improvements.

Doctor Davenport lived in a time of change. The physician of an older generation was passing away. The family doctor, the family friend, the comforter, the counsellor in many things besides the ills of the body, was disappearing. The onrush of medical knowledge now demands incessant devotion to science, and one man can no longer compass the whole range of medicine. The specialist has come to stay, but there is often little time for him to learn to know and love his patients. Doctor Davenport combined what was best in both. A skilled specialist, a leader in his art, he had so imbibed the spirit of the older generation, that he endeared himself to those whom he served and became their friend as well as their physician. In these days, it is a splendid thing to say of a man that his aim was not altogether brilliant surgery, but the comfort and cure of his patients. How much more this involves than surgical technique none knew better than he.

One hears many regrets that the physician of today has turned his back on the humanities, that he has been absorbed by his pursuit of science. It was not so with Doctor Davenport. He was a lover of letters and of art, making true companions of his books. He was a friend of institutions that make for culture. We are proud of his unique library of the literary works of medical men, which he so generously placed for us in our Medical Library. May it forever serve as a memorial of the giver, and may it attract our physicians, during the years to come, to a closer contact with that human culture, which is becoming less and less a factor in the life of the modern physician. Thus will his gift to our library best fulfill the wishes of him who gave it. His liberality and breadth of view, due in large part to his alert mind, proved his interest in those many great and good things for which such a library stands.

Quiet and modest though he was, he was vastly dependent on the companionship of others. His kindliness, his sense of humor, his even temper, his adaptibility, made him welcome in many different circles. He abhored sham whether it be in doctrine, in practice, or in men. He quickly grasped the essential character of people, the accuracy of his estimate of men being almost uncanny, but his judgment was always fair. Especially as concerned his professional colleagues was his attitude always just and generous. Friendship was to him life's greatest possession and it was vouchsafed to him in abundance.

Doctor Davenport's philosophy of life was to take it as it came. He enjoyed small pleasures as well as great. He wanted others to enjoy life too, and did his part to make them do so. He had none of that rebellious spirit which the psychiatrists tell us is at the bottom of so much mental unrest. Hence, when the end came, our friend met it calmly and serenely. Though it was linger-

ing and filled with much discomfort, finally, without complaint and cheerful, as always, with those about him, he quietly left us.

Charles V. Chapin
Halsey DeWolf
John M. Peters
Committee.

James Raymond Morgan

James Raymond Morgan, son of James Rogers and Jane Gray (Raymond) Morgan, was born in Waterford, New London County, Conn., September 28, 1847, and died in the Rhode Island Hospital, September 25, 1928, lacking three days of being eighty-one years old. Funeral services were held at the Beneficent Church, of which he was a member, and the burial was at Cedar Grove Cemetery, New London, Conn.

For the past six years Dr. Morgan was confined to bed and a wheel chair after having been an invalid for years.

In 1892 Dr. Morgan married Miss Jennie Ellen Warren, daughter of Dr. W. W. J. Warren, of Lyme, Conn. She died in May, 1926. There were no children and Dr. Morgan left no relatives nearer than a cousin.

Dr. Morgan's medical training was exceptional, especially for one of his generation. He entered the Harvard Medical School in September, 1868. After two years there he received an appointment as interne at the Rhode Island Hospital and served for one year from September, 1870. This was the beginning of fifty-eight years' interest in the Rhode Island Hospital. He was the fifth interne to receive the appointment and at the time of his death was the oldest of the living graduates of the Rhode Island Hospital.

Following this service came another year, his third (it was then a three-year course), at the Harvard Medical School, followed by a year as House Officer in the Surgical Service at the Boston City Hospital. He then received his Doctor's Degree in Medicine from Harvard University, 1873. It was customary in those days not to grant the degree to anyone entering a service in a Boston Hospital until that service was finished. Thus the Visiting Surgeon used not impair his dignity by calling a member of his House Staff, "Doctor."

All this was followed by a year abroad in Vienna where he gave especial attention to dermatology and obstetrics.

Dr. Morgan began general practice in Providence in the autumn of 1874, having an office for six years on Broad, near Fenner Street. He then removed to Franklin Street where he had his office and residence for nearly forty years. While always engaging in general practice, he became recognized as an authority in dermatology.

Staff service at the Rhode Island Hospital was practically continuous from January, 1876, until his death, a period of fifty-two years lacking three months. He held the following appointments: Surgeon to Out-patients, January, 1876, to January, 1883; Visiting Physician in House, January, 1883, to May, 1891, to October, 1909. (This department Dr. Morgan organized and was its first head); Consultant, December, 1909, until his death.

Death did not end the evidence of his interest in the hospital and his special work. The greater part of his estate was left to the Rhode Island Hospital, $4,000 for a bed in memory of his mother and $11,000 to the Out-patient Department for the promotion of Treatment of Diseases of the Skin.

His was a very consistent life. He did not preach but he certainly practiced what he could have preached. The practice of medicine was his chief interest—almost his sole interest, and this was without any idea of personal profit or aggrandizement. He seemed never to think of himself except as an instrument of the profession. He was wise enough, however, to try to offset the wear and tear of his work by a yearly month's vacation.

With this concentration on his profession there was not time or energy for much outside. He deeply loved his home. His mother lived with him until she died at an advanced age in 1892.

His one hobby was a good horse and he always had one, usually one with a lively disposition.

The invalidism of his later years never clouded his impersonal cheerfulness nor caused complaint. His work was his life, yet as his work stopped the scheme of things was still accepted.

What is the reward of such a life? To him who lived it the idea that a reward was due never occurred. To Dr. Morgan it was sufficient that he had been a physician. He was a good physician.

Charles H. Leonard
Lucius C. Kingman
John M. Peters

Dr. Meyer A. Persky

Dr. Meyer A. Persky passed away suddenly on August 31st, 1928, at his home in Providence. His untimely death occurred when he was but thirty-six years of age.

Dr. Persky was born in Russia, the son of Joseph Persky and Lena Zammara. He came to the United States at an early age, attending the public schools of Haverhill and of Malden, Massachusetts. He obtained his medical degree from Tufts College Medical School in 1915. Throughout his school career, Dr. Persky was always a brilliant scholar and graduated with honors from both his preparatory school and professional school.

After a year's internship at the House of Mercy Hospital in Pittsfield, Massachusetts, he came to Providence in 1916 to practice general medicine. In 1917, he enlisted in the United States Army and saw active service overseas as a medical officer with both the British and American forces. After his honorable discharge from the Army at the conclusion of the World War, he returned to Providence to resume his practice of medicine.

Dr. Persky spent almost the entire year of 1926 in Europe doing intensive post-graduate work in surgery. He collected a great deal of data in Vienna and Budapest which was to form the basis of several scientific papers. Several weeks before his death, in the June 1928 Annals of Surgery, the first of these papers appeared under the title of Brachial Plexus Anesthesia. He received letters from several well-known surgeons in this country offering favorable comment on this thesis.

Further papers were in the process of completion at the time of his unexpected death. In previous years, other articles by Dr. Persky appeared from time to time in various medical journals.

Dr. Persky was a member of the Providence Medical Association, the Rhode Island Medical Society, a former president of the Jacobi Medical Club, a fellow of the American Medical Association, a member of Overseas Lodge of Masons and Providence Royal Arch Chapter, Surgeon in the Providence Post of the Jewish Veterans of the Wars of the Republic, a member of the Prague Surgical Association and the Providence Sheep-Skin Club. He was also affiliated with the Medical Staffs of the Miriam and Homeopathic Hospitals of Providence.

Dr. Persky's studiousness and devotion to his professional work were greatly admired by all those who came in contact with him. He was unmarried and is survived by his mother, father, two brothers, and a sister.

Henry L. C. Weyler, M.D.
Charles O. Cooke, M.D.
Simon Albert, M.D.

SOCIETIES

Providence Medical Association

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Arthur H. Ruggles, Monday evening, February 4, 1929, at 8:50 o'clock. The records of the last meeting were read and approved.

An obituary on Dr. Meyer A. Persky was read by Dr. H. C. L. Weyler. It was voted to accept this, spread it on the records and send copies to the Rhode Island Medical Journal and Dr. Persky's family. The first paper by Dr. Roland Hammond was on, "Teaching Orthopedic Surgery with Motion Pictures." This was illustrated by a film which he used in teaching nurses, showing the orthopedic treatment at the Rhode Island Hospital and Crawford Allen Memorial. Remarks were made by Dr. Danforth and Dr. Rounds.

Dr. Harry C. Messinger presented a case of Optic Atrophy caused by Leontiasis Ossea. The patient, fourteen years old, attributed her left-sided blindness and enlargement of left side of head to a fall at the age of three. She had no marked abnormalities except that caused by the local overgrowth of bone. It usually occurs in girls at puberty. Several photos showed the girl at varying ages. Dr. Henry McCusker reported

another case. This case also had a history of injury to the side of the head in early life. A series of films showed the typical bone changes in the skull in Pagets disease compared with the bony enlargement of the facial bones in Leontiasis Ossea. There were also photos of the face. Dr. Murray Danforth showed a series of X-rays of Pagets disease to compare with Dr. Messinger's case. Dr. Phillip Batchelder made some remarks. Dr. I. Gerber described several slightly different types of cases called Leonthiasis Ossea. Dr. Van Benschoten discussed eye symptoms. Dr. C. A. McDonald discussed the nerve symptoms. Drs. Harrington, McCusker and Messinger discussed the problem.

The meeting adjourned at 10:30 P. M. Attendance 51. Collation was served.

Respectfully submitted,

Peter Pineo Chase, *Secretary.*

Report of Meeting of New England Medical Council

Being the only member of the New England Medical Council from Rhode Island attending the last meeting, I submit briefly a report of that meeting.

It was held at Belgrade Lakes in connection with the Seventy-fifth Anniversary of the Maine Medical Society. Delegates to the New England Medical Council were entertained as guests, all of whom were delighted with the hospitality extended. The meeting of the Council was held on June 19th at the Belgrade Hotel. There were present representatives from each of the New England States. The program consisted of reading and discussion of papers dealing with the drugless cult problem.

It was voted that speakers be furnished to the Maine Medical Society for the purpose of combating an amendment to an osteopathic bill which will be presented in Maine early next year.

The object of the Council appears to be to do away with medical journals published in New England except the one published in Boston. Our transactions are well presented in our own journal, and it is improving from year to year. It is one of which we are all proud, and I am in favor of continuing its publication.

The other matter which the Council is much interested in is reciprocity. This is an impossibility, as Rhode Island has for many years and now maintains a higher standard for its candidates than is required in any of the other New England States. Reciprocity under the present conditions cannot, therefore, be considered, except by the adoption and use of the individual endorsement certificate.

I have reviewed very carefully the reports of the two previous meetings of this Council, and was in attendance at this, its third meeting. I fail to be convinced that it has resulted in very much benefit to any party. It certainly has not to the medical profession in Rhode Island.

Respectfully,

Byron U. Richards, M.D.

HOSPITALS

The Memorial Hospital

Meeting of the Memorial Hospital staff held January 3, 1929. The meeting was called to order at 9:15 by President Wheaton. In the absence of the regular Secretary, Dr. P. B. Batchelder was appointed Secretary *pro tem.*

The minutes of the preceding meeting were read and approved.

The record of attendance was taken. Fifteen members were present.

The scientific program consisted of a presentation of interesting cases from the hospital records, as follows:

Dr. E. A. Shaw: (1) Ovarian Cyst, (2) T. B. Mysentery Gland with Intestinal Obstruction, (3) Bullet Wound in Abdomen.

Dr. F. V. Hussey: Ovarian Cyst.

Dr. A. T. Jones: (1) Ovarian Cyst, (2) Massive Bladder Stone.

Dr. J. L. Wheaton: Sarcoma of Chest.

Dr. C. F. Sweet, Influenza with question of Encephalitis.

On motion of Dr. C. F. Sweet, the officers for the previous year were re-elected.

Dr. J. L. Wheaton, President
Dr. J. E. Donley, Vice President
Dr. J. F. Kenney, Secretary
Dr. J. L. Turner, Treasurer

On motion of Dr. F. B. Sargent, Dr. H. B. Moor and Dr. H. E. Harris were appointed a committee to consider the matter of attendance at staff meetings and to report at the next meeting.

Dr. Wheaton announced that the Entertainment Committee would be appointed at the next meeting.

On motion of Dr. Sweet the dues were fixed at $1.00 for the ensuing year.

Meeting adjourned at 10:30 P. M.

P. B. Batchelder, M.D.
Secretary pro tem.



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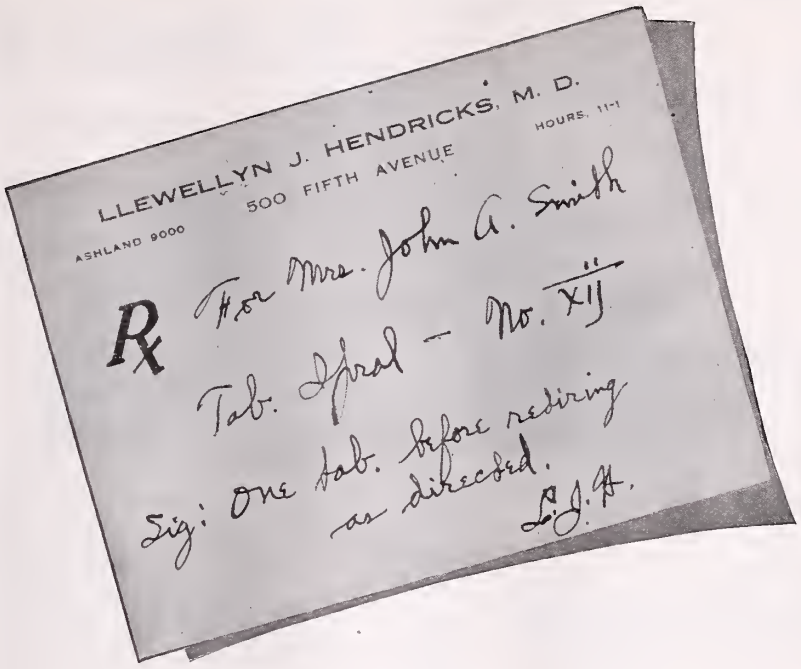
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*Jackson, D. E. and Lurie, L. A.: Experimental and clinical observations on the actions and therapeutic uses of ethylisopropylbarbituric acid. *Jour. of Laboratory and Clinical Medicine,* **11**:116.

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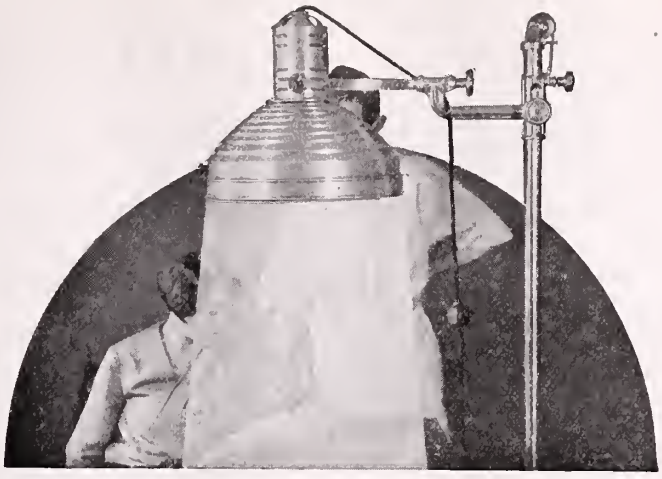
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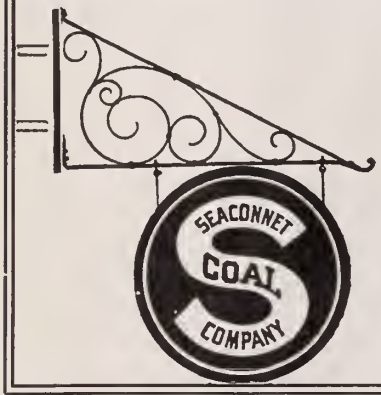
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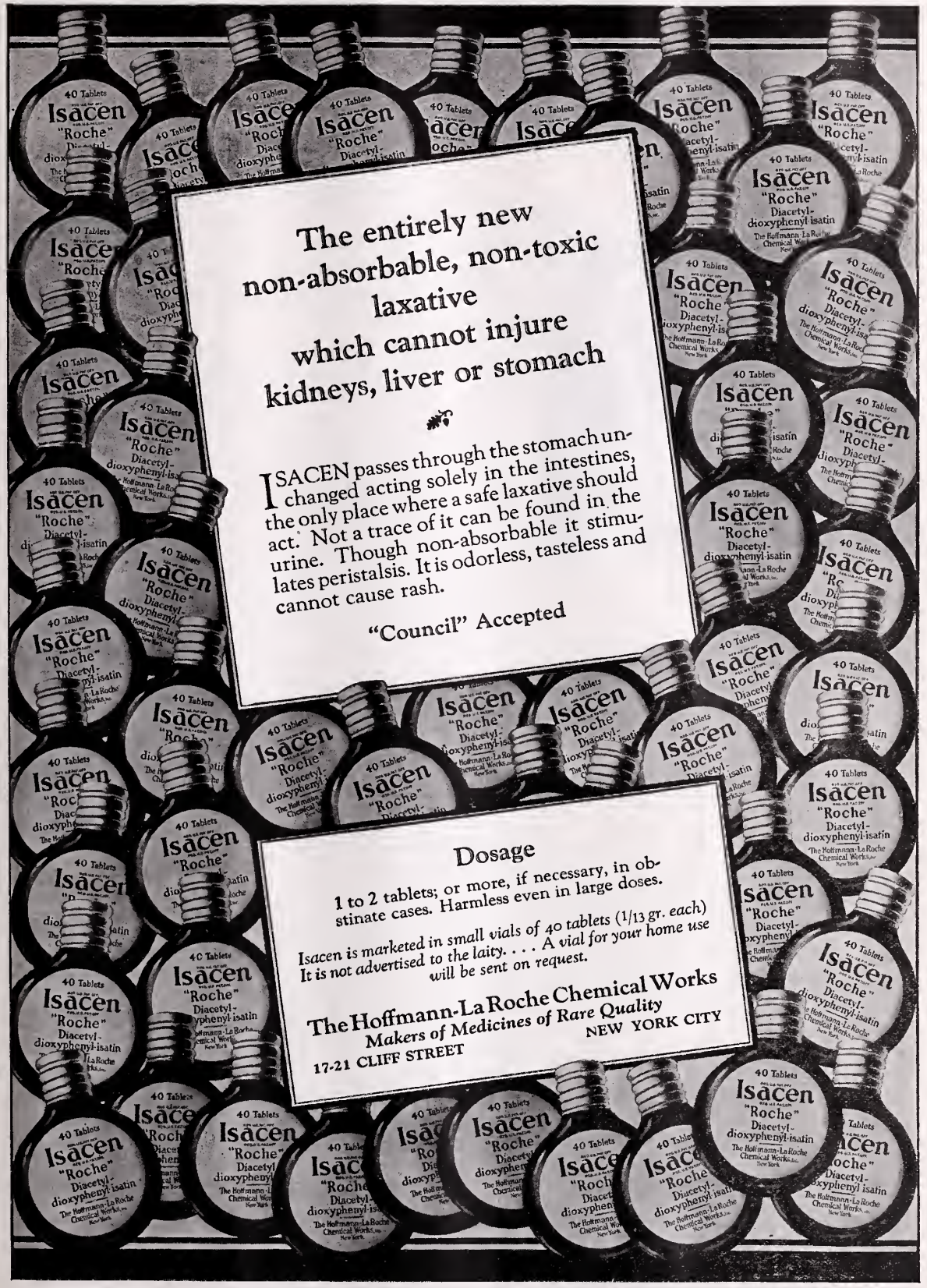
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ORIGINAL ARTICLES

NEUROLOGICAL CONTACTS WITH OTHER BRANCHES OF MEDICINE*

By Harvey B. Sanborn, M.D.
Providence, R. I.

I aim to call to your minds certain general considerations which I am thinking of as bonds or points of contact between neurology and other branches of medicine, and then to speak of some diseases and syndromes which from my own experience seem to be of more or less common interest to the neurologist and the general practitioner or the specialist in some other lines.

In the first place there is the physiological aspect of the nervous system which includes the vegetative nervous system. The latter has terminations in the smooth muscles of all organs of the body in which the latter are found and this includes the blood vessels and heart, gastro-intestinal and genito-urinary tracts and some of the special sense organs as well. It also has terminations in all the secretory glands of the body and the endocrine glands as well. Many of the nerve cells of this system lie in the spinal cord and brain, and it has been found that a regulating centre for the whole vegetative system lies in one of the lower and older divisions of the brain called the diencephalon. This centre probably is to its system about what the brain is to the central nervous system. Impulses set in motion by various forms of stimuli traverse this system and produce activity or modify the activity in muscular walls of blood vessels, in the heart, the digestive tract, the various glands and so forth. Co-ordinated and controlled by the centre in the diencephalon, these regulate the blood supply to various parts of the body, the motor activity concerned with the digestion and other functions and the secretory activities of glands. Seemingly all the organs of the body are dependent on a proper functioning of the vegetative nervous system. Closely related to this system, both anatomically and functionally—so closely related that we may perhaps think of them as a part of the system, are the endocrine glands. Some of these glands are actually partly made up of nerve cells. These glands are stimulated by the nerves ending in them and perhaps by the secretions of other glands as well. They in turn affect the whole nervous system and each other. Together with the vegetative system, these glands seem to have as one of their chief functions the preparation of the body as a whole for one of two sets of activities. (1) They may be, according to circumstances, those of violent muscular activity such as arduous work, racing, attacking an enemy or fleeing from one, or facing any alarming situation. Or (2) they may be the activities concerned with digestion, reproduction and excretion. These two states are quite opposed to each other and are accompanied by quite different states of feelings or emotions. So closely related are the emotions and the state of activity of endocrine glands and vegetative nervous system that we cannot apparently have an emotion without a definite corresponding state of activity on the part of these glands and nerves; and these in turn affect the functioning of all organs of the body. We think of the emotions as ordinarily being aroused by certain situations in the environment, immediate both as to time and space, but we know they can as well be aroused by a mental representation. It may be the memory of an event which in the past aroused emotion or it may be an entirely different idea but one which in the unconscious is associated with the disturbing event in the past. So, if emotions are accompanied by changes in the functional state of practically the whole body, then it appears that ideas may, by becoming associated with the idea with which the emotion is connected, also be followed or accompanied by these same somatic reactions.

These body disturbances which accompany transient emotions are not thought of as disease, although we all have had the opportunity to observe both in ourselves and others how anger, fear and deep sorrow may be accompanied by loss of appetite, digestive disturbance, a sense of weakness and

*Read before the Rhode Island Medical Society December 6th, 1928.

other manifestations which often are symptoms of disease. If it can be demonstrated that a person can harbor one or more of the harmful emotions over long periods of time, even though they be of comparatively mild degree, then it is not difficult to see how they may be the basis of some so-called functional disease. This we believe is the case. In the psychoneuroses we find biological mechanisms at work producing the symptoms of these diseases in the attempt to relieve mental tensions or emotional conflicts, the ideas connected with which, lie in the unconscious layer of the mind. In still other functional diseases we have reason to believe that psychic states are etiological factors. We are even interested in the question whether psychic states may not be etiological factors in so-called organic diseases. Some have given us records of cases which seem to answer this in the affirmative. Regardless however of what the future may find to be true of relationships between psychic states and organic disease, recently acquired knowledge in the neuro-psychiatric branch of medicine has given us new conceptions which are suggestive. The first of these is the recognition of the difficulty of drawing a line between functional and organic—the thought that in some instances at least the so-called organic is but the late stage of a process which had a functional beginning. The second conception is that mind and body are not to be regarded as separate entities but rather as two different aspects of the same thing, like two faces of a crystal, to use the words of Dr. William A. White. Or, we may think of the affect (emotions and feelings) as a bridge between the mental and the physical, and the vegetative nervous system as the neurological machinery which, together with the endocrine glands translates the affect into appropriate body reactions. Another thought, not so new perhaps but being emphasized at present, is that we should not aim to treat the disease but rather to treat the individual, and that we cannot fully understand a part without understanding first the individual as a whole. Further we cannot fully understand the individual apart from his past development, his present environment and his future goal.

Leaving the realm of the abstract, let me now speak of several conditions which seem to me from my own experience to present some claim to the interest both of the neurologist and to men in other branches of medicine. I shall try to group them according as the neurological aspect concerns the brain, cord or nerves or is functional.

(a) Brain.,

Fairly often we see some patient manifesting acute cerebral symptoms such as delirium, convulsions, coma or meningismus and who for a while presents an interesting diagnostic problem. We have all seen cases, especially children, who for a while showed pretty definite meningeal signs and who only after 24 or 48 hours showed signs of lobar pneumonia, and whose spinal fluid if examined failed to show evidence of meningitis. In passing it is perhaps worth while to mention the need of bearing in mind the possibility of meningeal symptoms in the onset of an acute infection and refraining from an unnecessary spinal puncture under these circumstances, as some evidence has been presented to indicate that to do so increases the danger of actual meningeal infection being imposed on the general infection. On the other hand, one must remember that where an epidemic type of meningitis exists, to delay positive diagnosis by spinal puncture and the institution of serum therapy is to greatly lesson the patient's chances for recovery.

Also we have all seen cases where for a few hours at least we were uncertain whether the acute cerebral symptoms present were due to intracranial disease or to a nephritic condition. Considerable urinary signs may be found even in the case of acute intracranial disease, but in acute nephritis we generally find blood in the urine and oedema of the face on which to base a diagnosis; and in chronic nephritis the blood chemistry is generally of distinct aid. Another situation which may occur is a vascular brain lesion occurring in a chronic nephritic. If in addition to the coma and signs of chronic nephritis we find local cerebral signs e.g. a hemiplegia, we have presumptive evidence of a vascular lesion. In a person profoundly comatose it is not always perfectly apparent at once whether or not a paralysis of one side exists. Sometimes we can detect a slight difference in the way one limb falls on the bed when it has been lifted and let go, as compared with the opposite limb. Also the testing of the abdominal reflexes may be of value in these cases. If we find the abdominal reflexes present on one side and absent on the other, even though the limbs may

appear equally flacid on the two sides, we may strongly supect a lesion of the brain on the side opposite to the side of the lost abdominal reflex.

Another form of acute cerebral disturbance which we see only occasionally and only in the Fall of the year and which presents a very striking picture, one never to be forgotten when once seen, is that produced by a certain poisonous fruit. This fruit, which is popularly known as Devil's Apple or Devil's Pear belongs to the Belladonna family. It grows in this vicinity and when found by children is occasionally eaten and when eaten produces the striking and characteristic symptoms of poisoning by this drug. The skin is highly flushed; the pulse is rapid and full and there is apt to be some fever. The child is highly active, threshing or rushing about unless restrained. Mentally he shows an active delirium —talking incessantly and going from one subject to another, lacking coherence. When the stomach is emptied by vomiting or by stomach tube the undigested green and white substance of the fruit is recovered.

(b) Cord Conditions.

There is one cord condition which is of great interest to the internist as well as the neurologist, at times offering no diagnostic difficulty and at other times the greatest difficulty. I refer to the cord lesion so frequent in pernicious anemia. One of the points of interest in this disease and the one which causes the diagnostic difficulty is the fact that the neurological signs may be the first manifestation of the disease. On examining the blood we may find no, or but slight anemia and that more of the secondary type. Of course the blood picture of pernicious anemia more often precedes or accompanies the cord manifestations and unless it does appear eventually we cannot maintain our diagnosis. But this point is very important: that the neurological picture may precede the anemia.

The most constant pathological changes, found in the cord in pernicious anemia are a sclerosis of the posterior sensory columns and the lateral pyramidal columns. The clinical picture varies quite a bit but there are almost always certain clinical findings which are quite characteristic. In the first place the involvement of the pyramidal tracts causes some degree of weakness, generally affecting the lower extremities first, but eventually pretty sure to affect the upper ones as well. The weakness may continue of only mild or moderate degree for several months or a few years, being very slowly progressive. The pyramidal tract involvement also tends to cause an exaggeration of the deep reflexes with the appearance of certain pathological reflexes, notably the Babinski, Chaddock and Oppenheim and the loss of certain superficial reflexes such as the abdominal reflex. Also there is a tendency to increased muscle tone or spasticity. This gives the patient a sense of stiffness and awkwardness in the use of the limbs.

The posterior sensory tract involvement causes a senory disturbance affecting chiefly the deep sensibilities viz: joint, muscle and tendon. This causes difficulties of co-ordination and equilibration manifested in the lower limbs by ataxia of gait and station and in the upper limbs by unsteadiness of the hands and fingers when being used. There is also generally a subjective sensory disturbance complained of in the feet and up to a certain level on the leg. The posterior tract involvement tends to cause a loss of the deep reflexes and loss of muscle tone which is just the opposite of the condition resulting from pyramidal tract lesions. So we find in some cases the natural effect of pyramidal tract involvement predominating and giving spasticity, weakness, and increased reflexes, with some subjective disturbance and perhaps ataxia; while in the other cases the effect of posterior tract lesion predominates and we find loss of muscle tone and loss of deep reflexes, subjective sensory disturbance and marked ataxia together with some degree of weakness, this being a clinical picture very suggestive of tabes and, unless thorough examination including all the laboratory tests be made, liable to be confused with the latter disease.

In diagnosing the cord lesions of pernicious anemia when the characteristic blood picture is at the time not present, we have to depend on a clinical picture of one of the above described types with absence of any of the cerebral signs such as nystagmus and partial optic atrophy and speech difficulty which would suggest multiple sclerosis, absence of clinical and laboratory evidence of syphilis, and the common finding of gastric achlorhydria and a dry-red mucous membrane of mouth and tongue.

The fact that evidence of cord lesion may appear before the anemia is of further interest in

that it indicates that this lesion is not caused by an anemic condition of the cord but is probably due to some toxin which is in some way connected with the etiology of pernicious anemia. When the neurological signs have once appeared, they may not clear up with the restoration of a normal blood picture, though in some cases they become definitely improved.

The cord condition which perhaps is most frequently a source of diagnostic difficulty in relation to acute surgical conditions is tabes. The dorsal nerve root involvement in tabes may cause pain limited to some part of the abdomen and perhaps be accompanied by vomiting or by bladder or rectal symptoms, this suggesting a surgical condition when none exists. A paralyzed bladder with retention and distention may be one of the earlier prominent symptoms of tabes and may suggest a surgical condition. One of our surgical confreres was recently called to a neighboring town to see a woman who showed marked distention of the bladder and who had been told by the local physician that she had a tumor. The tumor rapidly disappeared on catheterization and the surgeon realizing that there was probably some cord disease referred her to me. Tabes was positively diagnosed.

On the other hand, the problem may be that of dinagnosing a surgical condition which actually exists in a person who is a tabetic, subject to the pains of this disease and also to a dulling of the deep forms of sensation. In such a patient devoloping appendicitis the characteristic pain and tenderness of the latter disease are liable to not appear and the condition remains undiagnosed until a definite abscess has formed.

In some cases of epidemic encephalitis the chief symptoms at a certain early stage of the disease have been fever with acute localized pain and perhaps some muscular rigidity. In one such case which came under my observation, acute gall bladder disease for a while was seriously considered. Within a day or two however, the appearance of myoclonus, occular paralysis, etc., cleared up all doubt as to the diagnosis.

In a similar way cases of epidemic hiccough, which is undoubtedly a disease or syndrome of the central nervous system, no doubt often come to the attention of the surgeon and the internist.

I wish now to speak of a group of cases presenting symptoms of nerve root involvement i. e. pain in the distribution of certain spinal nerve roots with or without paraesthesia and objective sensory defect and with or without some signs of compression or other lesion of the cord, such as paresis of the lower limbs or all four limbs; bladder disturbances etc., and a radiograph of the spine showing definite evidence of hypertrophic arthritis. The question is: (1) Can hypertrophic arthritis of the spine cause nerve involvement and (2) can it cause compression of the cord? I must confess I do not yet feel real certain on this subject, but have formed some tentative conclusions. In the first place I think most of you will agree with me that radiographs of the spines of people past middle life show, in many cases, definite hypertrophic condition where no pain nor other neurological symptoms are complained of. So that the finding of hypertrophic changes does not necessarily account for pains or other neurological conditions when they do not exist. I do believe that we may have at some level in severe cases actual impingement on nerve roots as they pass through the intervertebral canals. But I also believe that in most cases where pain exists it is caused not by pressure on the nerve but is due to joint involvement and the pain is simply referred to the distribution of the nerve whose branches supply the affected joint. As to whether hypertrophic arthritis may be the cause of compression of the cord: I can only say that the literature speaks of such cases and I do not doubt their existence, but they are rare and unless X-Ray showed definite evidence of marked boney deformity at a level which corresponded with the clinical signs I should be slow in making this diagnosis.

(c) Nerve Conditions.

A lesion or disease condition of the nerves themselves is many times somewhat hard to differentiate from some condition of quite different origin. Take for instance the painful conditions of the shoulder and arm of one side. Many of these come to the neurologist already diagnosed by the doctor or by the patients themselves as neuritis. Many of them are that or at least are neurological cases. A few of them are hysterical; some occupational neuroses; some are neuralgias; some are cases of compression nueritis or radiculitis and some are toxic e. g. due to syphilis, diabetes, herpes, zoster, focal infections and exogemous poisons. Often, however, we find on care-

ful examination including X-Ray study, evidence of subdeltoid bursitis, of arthritis or periarthritis of the shoulder or hypertrophic arthritis of the cervical spine. In the diffierential diagnosis of these conditions we need to bear in mind that in any acute joint or bursa inflammation, motion becomes greatly limited or lost due to pain and where motion is lost a moderate amount of atrophy follows. If a motor nerve is destroyed, or its cells in the anterior horn of the cord, the atrophy is more intense. Furthermore if a mixed nerve is affected, (all the large nerves from the brachial plexus are mixed nerves) then we may expect both sensory loss and atrophy, and if the condition is an acute inflammatory one we shall find tenderness along the course of the nerves as well.

In the lower extremities we also observe many cases of pain referred to the course of a certain nerve the cause of which may be uncertain. I shall confine myself to those of the sciatic nerve. Hip joint arthritis may be confused at times but this is not so likely as in the case of the shoulder. In cases of pain along the course of the sciatic nerve which do not develop objective signs we may use the term sciatic neuralgia, but a large majority of them which persist any length of time do develop some neurological signs such as diminished or lost Achilles reflex, sensory defect, muscular atrophy or nerve tenderness, and these cases should be designated sciatic neuritis. The etiology may be, as in neuritis elsewhere, a focal or general infection, or a toxic state of either endogenous or exogenous origin. A large proportion of them are caused by some lesion of the spine; and we must bear in mind that some cases of cord tumor in an early stage give a picture of unilateral or bilateral sciatic neuritis. As one fairly common example of an endogenous toxine causing sciatic neuritis, I would call to your minds diabetes. In this disease we may have a painful neuritis or radiculitis, more often affecting one or both lower extremities. The pain is apt to be the chief symptom, but we may also have ataxia and loss of deep reflexes, this syndrome constituting the so-called pseudo-tabes or diabetes. Motor paralysis and atrophy are not common. In treating these cases it is interesting but disappointing to note that though the glysosuria may clear up promptly the radiculitis is liable to be very slow in clearing up.

To return to conditions of the upper arm I wish to remind you of one of special interest to the man who treats fractures and to the orthopedist. This is the so-called Von Volkman's paralysis or contracture. It is really a myositis based on a partial necrosis of several muscles due to too great pressure from the application of splints and almost always occurs in the forearm, those muscles on the interior surface being chiefly affected. Hard fibrous tissue replaces the normal muscle tissue and a contracture results in which the wrist and interphalangeal joints are flexed and the metacarpo-phalangeal joints remain extended. The location of the affected muscles not confined to any one nerve supply, the presence of hard fibrous tissue where normal muscle should be generally make a diagnosis clear.

I have recently seen two cases of organic neurological disease which had been diagnosed flat feet and treated for some time for that condition because of pain in the feet and the actual presence of broken down arches. One was a case of tabes in which the pains were largely confined to the feet but in which a high degree of ataxia had developed before correctly diagnosed. The other case was one of neuritis, probably alcoholic, which developed considerable paralysis before coming to a neurologist.

(d) Psychoneuroses.

Of the psychoneuroses the one which by far the most frequently is confused with other conditions of all sorts, neurological, medical and surgical and in fact of practically all the specialties, is hysteria. To see hysteria simulating organic disease is so commonplace an occurrence that I feel like apologizing for taking the time to consider it, and yet as a justification for so doing I can say that cases of pure hysteria are being operated on daily chiefly for abdominal surgical conditions which are not found. But not to be unfair I must hasten to add that we neurologists are frequently overlooking medical or surgical conditions and denying them the proper treatment, because we have diagnosed hysteria or anxiety neurosis and so feel that every complaint the patient makes must belong to the psychoneurosis. And in many of the cases of fruitless operations on psychoneurotics, no great criticism is justified as the apparent surgical conditions may be practically the first hysterical manifestation, and unac-

companied by the usual stigmata of hysteria. The clue which might at least cause the hysterical possibility to be more seriously considered is often not obtained, sometimes due to the stupidity of the patient and sometimes because not looked for by the physician. The clue I refer to is that which may often be obtained through a time and painstaking history of the patient's activities and emotional state during the fortnight preceding the onset of symptoms. I have in mind a girl of nineteen who had been in this country three years employed as a house-maid. She developed abdominal symptoms rather acutely and was given the benefit of a laparotomy. But it failed to improve her condition; in fact her symptoms were added to, and in a short time there was no question but that she was suffering from hysteria. The story which she gave the neurologist was that she had been perfectly well up to ten days before her operation when she was subjected to either an actual or attempted sexual assault by the man in whose home she was employed. Within a day or two her abdominal symptoms began. Of course such a story does not prove that the patient was suffering from hysteria but it is one of the suggestive clues which we should look for and if found, evaluated.

The stigma which will most often serve to prove the presence of hysteria is the anaesthesia—an anaesthesia so characteristic in its form and distribution as to seldom leave any doubt as to its differentiation from that of any organic lesions of the nervous system.

The question may arise whether, even when an apparent surgical condition is known to be hysterical, it is not a justifiable and potent therapeutic measure to operate. Inasmuch as suggestion is known to be the most commonly used and most commonly successful means of relieving hysterical manifestations, why not use the powerful form of suggestion which goes with surgery? It often is successful in relieving the symptoms, but as so often happens after other therapeutic measures which remove only the symptom and the underlying cause remains, either the same or new symptoms are apt soon to reappear; and where surgery has been resorted to once, a recurrence of symptoms is apt to be taken very seriously and a second and third operation resorted to; for after the first operation there is ground for the thought that now we may have adhesions causing the trouble or a sponge left in the abdomen at a previous operation. On the whole certainly none of us like victims of hysteria as operative patients.

There is another problem which presents itself in the confirmed and manifest psychoneurotics, mostly of the neurasthenic or anxiety neurotic type. The neurotic aspect is obvious, but equally obvious is some surgical conditions, the sort of condition in which operation is not a real necessity but a measure tending to improve the patient's health in some respect e. g. the deviated nasal septum, the prolapsed viscus, the torn cervix or the systic ovary. The question which must be threshed out in such a case between the neurologist and the surgeon is this: granting the advisability of operation in an otherwise normal person, what shall be our attitude in the case of the psychoneurotic. Each individual case needs to be carefully analyzed. In some cases the surgical condition is one of the causative factors of the neurosis and needs to be corrected. In other cases there is no question but there is no etiological relationship and that an operation will remove only one or two of the patient's many symptoms. In such a case the advisability of operation must be carefully weighed. In still other cases not only is the surgical condition a relatively subordinate part of the picture, but to operate is probably going to make the individual as a whole still worse.

In common with the internist and general practitioner the neurologist sees not a few patients showing cardio-vascular symptoms concerning which the question arises: are they mild organic or toxic cases or are they purely psycho-neurotics? The world war gave us many examples of a type of cardiac disturbance which we designate "effort syndrome" or neuro-circulatory asthenia. We see them in civil life as well. The symptoms are fatigue, palpitation, precordial pain, a sensation of breathlessness, rapid pulse, and frequently attacks of dizziness or syncope, tremor and vasomotor disturbance of the hands. Where the nature of the disturbance is still in doubt after the usual history taking and clinical examination resort to X-Ray or the electro-cardiograph will serve to rule out an organic condition. It is the feeling now that these cases are but one manifestation of a psycho-neurosis and back of them there is an unstable nervous system, evidence of which can generally be found in either the per-

sonal or family history, with of course some exciting cause like trauma, fatigue, infection or just domestic discord. It is possible that in some of the cases a toxic element, namely nicotine poisoning, may enter.

In civil practice we see cases of this syndrome which in addition run a moderately high blood pressure; also cases in which we have to think of hyperthyroidism because of the rapid pulse and tremor and whose basal metabolism is at about the upper limit of normal. The latter are the cases which might be called mild cases of hyperthyroidism but in which a definite psychic etiology can be established and which responds to psycho-therapy.

We see also cases of arterial hypertension without the above mentioned symptoms which are psycho-neurotic in nature and etiology.

In all these cases we must remember that a pyscho-neurotic and an organic condition may be superimposed, one upon the other.

When we come to disturbances of the gastro-intestinal tract we find frequent confusion between the psycho-neurotic and the organic. We find many cases which are purely psychic in origin. In many other cases such as gastric ulcer and cardiospasm unbalance of the vegetative nerve system certainly must be considered as a possible factor and perhaps back of this is a psychic factor.

On the other hand we must remember that hysterical manifestations may have as their basis some organic condition such as an ulcer, and that an organic condition and a psycho-neurosis may co-exist in the same individual. Furthermore, we must, as I suggested in the beginning of my paper, consider the possibility of a condition purely psychic in etiology in its very beginning but evolving into a real organic lesion.

THE CLEARING OF TUBERCULOUS LESIONS FROM THE LUNGS*

By Harry Lee Barnes, M.D.

Superintendent of Wallum Lake Sanatorium, Wallum Lake, R. I.

Up to recent times it was generally believed that pulmonary tuberculosis healed only by fibrosis or calcification, and we estimated the degree of local improvement chiefly by the lessening of moist rales.

The development of X-Ray technique in the last fifteen years has given us a much more accurate idea of the amount of tuberculous infiltration. We now have the opportunity to see areas of increased density in tuberculous lungs which slowly clear until finally the lung presents an appearance which approaches the normal. As we have as yet obtained no necropsies on these cases, we have no knowledge of the microscopic anatomy of lungs which have cleared to X-Ray. It is well known that recently developed foci of tuberculosis in the lung are surrounded by areas of perifocal inflammation, and some investigators contend that the clearing of tuberculous lungs is due to the subsidence of these perifocal inflammations rather than to the absorption of caseous tubercles themselves. Gardner has apparently shown that in animals small areas of caseation are absorbed.

The thirteen cases reported in this series were selected over many others because the clearing was more marked and it was believed that they would show better in lantern slides.

Of the thirteen cases, there were nine in which the X-Ray picture showed clouding and mottling which suggested areas of caseous pneumonia. In three cases there were discrete flaky shadows. In one of the cases about half of one lung was filled with pin head sized soft appearing specks closely packed together. The lung cleared almost completely.

In lungs which have shown marked clearing, there frequently remains some enlargement of and beading on the lung markings which suggest peribronchial thickening. Quite occasionally there remain a few hard appearing specks or stringy shadows, apparently in the parenchyma, which suggests areas of caseation or fibrosis too dense to be absorbed. A close examination of the film, taken before clearing has occurred, in some cases shows these same dense nodular or stringy shadows dimly seen through the soft mottling. Some of these dense shadows which do not clear may be remnants of earlier tuberculous lesions.

Cases of mottling of a stringy type do not show as complete clearing. The clearing in long standing cases is pronounced in the lower parts of the

*Read at the quarterly meeting of the R. I. Medical Society, Wallum Lake, R. I., September 6, 1928.

lungs and diminishes as we approach the top, probably because the older lesions with caseation and fibrosis are more frequently located in the upper parts of the lungs.

In every case reported in this series, however, there was clearing in the first space, and in two out of three cases in which there was clearing in the fourth space there was equally good clearing in the first space. In only one case was there clearing at the apex.

The average duration of disease before admission of the thirteen cases was estimated to be six months, and if one case of three years' duration be excluded, the remaining thirteen cases had an estimated average duration of only three months. It seems probable that the short time elapsed between the clinical onset and the beginning of treatment was an important factor in the clearing of these cases.

In eight of these patients, the X-Ray appearance of cavities disappeared with the clearing. In one case the shadow of the cavity was over 4 c.m. across, and the others varied in size from 2 to 3 c.m. The X-Ray occasionally fails to show evidence of a cavity, and it is therefore possible that the cavities have not healed in some of these cases. X-Ray evidence of cavity healing is rare. I have only seen it in 10 out of over 1,000 cavity cases, or about one per cent. It may have occurred in some patients who have not been X-Rayed on discharge, and in others after they have left the Sanatorium, but in very few, because 90 per cent. of patients having cavities are dead within five years.

A large proportion, but not all, of patients who are fever free, who gain weight and who feel better, show clearing.

Of 21 patients now on our wards who appear to have improved and who were recently X-Rayed, 4 showed clearing in one lung; 5 showed clearing in both lungs; 7 showed no X-Ray evidence of improvement; 2 showed clearing in one lung and increase of the lesions in the other lung, while 3 showed increase in the lesions on both sides. Although this number of cases is too small to furnish reliable statistics, yet it is of interest to know that less than half of these patients, with considerable improvement of symptoms, show X-Ray evidence of clearing. On the other hand, patients with clearing almost always show definite symptomatic improvement.

Many clinical details are given in the accompanying table, which may be summarized as follows:

Twelve of these 13 patients were young people, their average age being 24; ten of them had positive sputum on or about the time of admission, and all were bacilli free on discharge.

Eight of these patients had a slight rise in temperature for a few days or for a few weeks, while 5 were fever free. All but one patient gained weight, the average gain of those who gained being 18 lbs.

Twelve of the 13 patients had rales on admission. One had no diminution of the number of rales; 4 had such diminution, while 8 were free from rales on discharge.

All of these patients are living from 1 to 6 years after discharge. One of them has passed through a normal pregnancy and labor without relapse, and is now a wage-earner.

Case No.	Age	Sex	Date Adm.	Date Dis.	Duration of Disease Months	Fever Resi-dence	Lbs. Gained	T. B. Adm.	T. B. Dis.	Rales Adm.	Rales Dis.	Area of Clearing to X-Ray	Months Elapsed for Clearing
6257	19	F	8/22	8/23	6	—	12	—	—	+	less	rt. upper cavity	11
8493	49	F	2/27	10/27	3	4 mo.	30	+	—	+	less	both upper lobes	8
7811	24	F	10/25	1/26	1	—	18	—	—	+	less	lf. upper ½ rt. base	9
7868	20	F	11/25	6/27	36	2 mo.	17	+	—	+	—	rt. upper ½ cavity	9
6002	18	M	3/22	5/26	9	2 wks.	8	+	—	+	—	Central ⅓ lf. (Cav.?)	26
7831	31	F	10/25	6/27	3	6 wks.	15	+	—	+	—	Central ⅓ rt. cav.	4-19
8485	20	F	2/27	5/27	1	—	10	—	—	—	—	lf. upper cavity	4
7708	23	F	7/25	11/26	6	1 wk.	20	+	—	+	—	lf. upper cavity	9
6674	29	F	6/23	2/24	1	—	26	+	—	+	—	lf. upper cavity	6
7496	15	F	2/25	2/26	3	1 wk.	25	+	—	+	—	lf. upper cavity	2-11
8382	35	F	11/26	2/28	1	2 wks.	26	+	—	+	—	rt. apex cavity	2-7
7934	27	M	1/26	9/26	3	2 wks.	17	+	—	+	+	rt. upper	6-12
6167	20	F	6/22	5/24	3	—	11	+	—	+	less	lf. upper ⅔ rds.	24

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FREDERICK N. BROWN, M.D., *Editor*
309 Olney Street, Providence, R. I.

CREIGHTON W. SKELTON, M.D., *Business Manager*
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EDITORIALS

CHIROPRACTIC

Nearly every year representatives of the cult called Chiropractic, come before the legislature with a request that the laws be rearranged for their satisfaction.

This year t'was House Bill No. 783 that asks that the age of a licensed practioner in Chiropractic shall have at least reached the age of twenty-three years, the elevation of certain examination fees and the services of the Board of Health's pathological and chemical laboratories.

At first glance, this last request might appear a bit odd of a cult that does not seek the cause of disease other than bony malposition, does no research work, that cares not to attack the problems of surgery, obstetrics or infectious diseases and holds to the theory that all diseases are the result of some impingement upon the spinal nerves as they emerge from the spinal canal and that these diseases can be cured by the single process of working along and upon the spine;—and this is all they ask or expect to do; con-

sider this and the second glance renders the absurdity of this request complete. This Act also requires the applicant to satisfy the examining board that he has completed eighteen months successful study at an approved chiropractic school or college and to have "passed" in fourteen subjects, one of which is anatomy that in itself would require two years at least, of any man's time to master. This Board further requires that the applicant has a preliminary education equivalent to a high school education. What is meant by 'equivalent'?

The following extract (*verbatim*) of a letter directed to a Chiropractic College in Oklahoma City, may not be the right answer, but it is illuminating:

"Sirs, Mister Kirpatic School. I want to rite letter an see if i can be kirpatic dr, if you can make a kirpatic dr. for how much money i got about 2 thousend dolers that my husband got when he died from insurance company that paid 3 thousend dolers but I ode lot of money and funerl an everything cost more 1 thousend dolers. Could i be kirpatic dr., for this much money about 2 thousend dolers in bank. I been nurse some and help drs, and kirpatic dr say i am strong and pretty an i make a good kirpatic dr. since my husband die I can live with my ant. * * * * * " This is only a part of a letter, but it is enough.

What would be the reception of this epistle at any college in the country, any high school or any grammar school? Yet the following is quoted from the answering letter:

" * * * * * While your education may be limited you have intelligence and determination and sufficient education to understand the English language you would have no difficulty in getting a knowledge of this subject so that you could go out and practice and be efficient. You can enter at any time and in eighteen months upon making your grades, can be graduated * * * * ".The finished letter is followed by the name of the College.

While the language of this letter hardly represents a high school education, did the "college" authorities regard it as "equivalent?"

We will admit, in all fairness, that the foregoing is an extreme case, nevertheless the chiropractic bill once passed, indicates that this cult, unwilling or unable to undo the latch, has crashed the gate of every requirement and every privilege of the regular physician, probably including the signing of death certificates, with eighteen months preparation upon a single agent alleged to cover the entire field of the practice of the treatment of disease.

If we were to cast aside all of the foregoing and every other consideration, is it reasonable to suppose that when men of life-long training, men who have spent their years in study, always willing and anxious to accept any agent from whatever source that would improve physical well-being finds no virtue in this mechanical adventure, is it for these eighteen months' graduates, imperfectly equipped and as a rule meagerly educated people to produce the answer? Or was Barnum right?

MALIGNANCY AND RADIOSENSITIVITY

For many years it has been known that the sensitivity of various tumors to the different types of radiation (X-rays and radium) is variable. Years ago Bergonié and Tribondeau formulated a law known by their name, according to which the sensitivity of different tissues to X-rays varies in proportion to their embryonic character. Those tissues whose cells are very near the embryonic type, such as the ovary, testis, etc., are particularly sensitive to small amounts of radiation. On the other hand tissues with cells that are highly developed, such as muscle and particularly tissues of the central nervous system, show relatively little sensitivity to the rays. On the basis of this law a large amount of the rationale for radiation therapy has been developed over a long period of years.

More recently, Broders of the Mayo Clinic has published some excellent investigations on the variation of malignancy in squamous cell carcinoma of the mouth with special reference to the histologic appearances. He has found that the malignancy varies in proportion to the lack of differentiation. These tumors where the neoplastic cells were differentiated completely so

as to resemble the normal organs were the least malignant; while the tumors that showed very little attempt at differentiation of the carcinoma cells were the most malignant. He was able to distinguish 4 degrees of malignancy, and a careful control with the clinical outcome of the various cases has shown that this classification is very valid and useful.

Attempts have been made in various laboratories to work out similar groupings for carcinoma of other regions. Greenough and Simmons of Boston have shown that a similar classification is possible with carcinoma of the breast.

The most recent development along these lines has been the intensive correlation of all these facts by Ewing and his co-workers in the Memorial Hospital in New York. They have confirmed the conclusions of the other observers to the effect that malignancy in these tumors exists in proportion to the degree of anaplasia or lack of differentiation. On the other hand they have gone further and have shown that tumors possess varying degrees of sensitivity to X-rays and radium, which also run parallel to the histological appearances. It is found that the more differentiated tumors such as adeno-carcinomas and neurogenic sarcomas, following the original law of Bergonié and Tribondeau, are relatively insensitive to therapeutic amounts of radiation. On the other hand the less differentiated tumors such as lympho-sarcoma, which have active mitosis and embryonal types of cells, are much more sensitive to radiation.

In other words, we know that the more undifferentiated the tumor, the more malignant it is in general. On the other hand the more malignant a tumor is, the more active are its cells and the nearer they are to the embryonal type; consequently the more satisfactory is the result from radiation. We have, therefore, an apparent paradox. It would seem that the more malignant a tumor was, the better was the prognosis. Probably the way the situation will work out in the future will be by a careful co-operation between the surgeon and the radio-therapeutist. Tumors that are of the first and second stages of malignancy will probably prove to be best treated by surgery, with complete removal. Those tumors that are of the higher degrees of malignancy will probably be found in the future to be best treated by radiation alone. In order to have this type of careful differentiation, it will be necessary to change the attitude of many of our pathologists. The pathologist's function in the diagnosis of tumors can no longer be satisfactory if he merely makes a diagnosis of carcinoma or sarcoma, or non-malignant tumor, etc., even if he gives the more significant tissue of origin, where this is possible. It will be of much greater importance for him to determine the grade of malignancy and consequently the degree of radiological sensitivity of the tumor. This is by no means an easy task and cannot be done in a short period of time. It will require prolonged and intimate contact with the surgeon and with the radiologist. When this highly developed co-operation is possible, the pathological diagnosis of tumors from a biopsy specimen will be on a much more scientific basis, and the treatment both by surgery and radiation will be less empirical than it is at present.

PNEUMONIA

This disease takes the lives of about 100,000 people in the United States every year. If wars killed that number every year the country would arouse itself to prevent such loss of life. Diplomacy and money would be employed without stint to prevent it. Yet how much interest is displayed in the prevention and cure of pneumonia. Very little. Just because the same thing happend last year, the year before and for many years gone by we take it for granted that what has been must always be. It is a dispensation of Providence, so it is reasoned. The same attitude has always been taken when big, difficult problems confront us. We lie down and let the steam-roller crush us when it might be avoided.

Pneumonia is theoretically a preventable disease. Who can say that there is not within easy reach a cure for it? Even now when more interest in this disease is shown than at any previous time, comparatively little investigation is going on. Small funds have been donated to a few laboratories for investigating means of prevention and methods of treatment. Some very interesting results have been obtained but when all is said and done little progress has been made.

A serum for type I and type II is being used with some success but it must be given intravenously and so often is it followed by serious anaphylactic shock that it requires real courage on the part of the physician to advise it. If it was efficacious when given by the intramuscular route it could and would be used generally. Physicans are loath to give protein containing preparations intravenously and rightly so.

Scattered about the country are a few health authorities who are studying the epidemiology of pneumonia and in two cities, Pittsburg and Los Angeles, houses in which pneumonia patients reside are placarded as are the homes of scarlet fever patients. It is very doubtful whether this procedure will succeed but it does indicate that investigation of methods of control is going on.

Of the means of prevention some method of vaccination is likely to be the best solution. Investigation of this problem can be carried on by a laboratory under the control of the health officer who is interested in solving this problem. It is necessary, however, for him to have a special investigating force in the laboratory and in the field because those who do routine work are usually too busy to do investigative work.

In studying the disease and its treatment and also ways of immunization, laboratories operated in connection with hospitals which care for pneumonia in considerable numbers are best suited for it. And again, it is necessary to employ special investigators because the laboratory staff is always swamped with routine work, and it is impossible to get a piece of investigative work done.

These investigations will cost money and a great deal of it. But surely the yearly loss of 100,000 lives is worth it. And it should come from generous benefactors and from public funds. If some disease was killing off the cattle in the country the federal and state governments would not hesitate to spend money to find out how it could be prevented. Human life is perhaps not worth as much. To really accomplish something the money should be given many investigators working in many laboratories rather than to give it all to one laboratory. Selecting laboratories in different parts of the country is an advantage because the germ flora differs.

The government or some big foundation should parcel out funds for special investigators among health authorities and institutions where they know facilities and material is available and where they know that the health officials or institutional heads are capable of directing or at least are enthusiastic about the investigation of the disease.

RECORDS

It is a cardinal rule in every laboratory where scientific investigation is being carried out that every observation made shall be promptly recorded. Fallacies due to faulty memory are too prone to creep into reports that are based on anything but prompt, accurate and unbiased recording of facts. This is a matter that the practitioner of medicine should take to heart. In his daily round of busy practice filled with observations which he makes on his patients accurately and carefully he is too likely to forget that facts he observes on one day may have become so clouded in his memory at the end of twenty-four hours that they become useless or misleading. Thus his private records which should be a storehouse of material of the greatest value as the years go no becomes merely a jumble of haphazard jottings of doubtful accuracy and meaning.

In our hospitals records are of still greater importance. With all the time, thought and money that is spent in carrying out painstaking clinical studies of the sick people committed to their care, hospitals can do no less in justice to the communities they serve than to maintain such carefully indexed systems of records that reports of the work done in their wards, operating rooms and laboratories can be accurately compiled and published. It is to the work in the hospital ward that the general practitioner must look for an accurate evaluation of any new method of diagnosis or treatment, and without complete and accurate system of records the hospital physician who wishes to report his cases is at a loss. Since the time of Hippocrates the accurate recording of observations has been a necessary part of the mechanism of medical progress and never more so than in these modern times of detailed study and elaborate technique.

THE TREATMENT OF URINARY OBSTRUCTION IN CHILDHOOD*

by

WILLIAM E. LADD, M.D., F.A.C.S.
BOSTON, MASS.

In recent years, due to the diminution in size and improvement of the cystoscope, it has become possible to investigate the urinary tract in children with much more precision than formerly. Besides the use of the cystoscope, we have learned that in a fair proportion of young infants with urinary abnormalities, we can acquire accurate data by injection of iodide into the bladder and due to the incompetence of the ureters, we obtain good ureteral pyelograms. In a short paper, it is impossible to give in detail the indications for a thorough examination of the urinary tract. Roughly speaking, however, it is fair to say that all cases of hematuria or chronic pyuria should be investigated. Added to these, one must remember that almost 90 per cent of the patients with acute or intermittent urinary obstruction, show symptoms which are likely to be misleading, that is, nausea and vomiting, abdominal pain or distention which suggest disturbance in the alimentary tract. In cases of urinary obstruction which are chronic and fixed, the symptoms may be extremely vague but even in these patients a careful examination of the urinary tract by cystoscopy, X-ray and urinalysis will often lead us to an accurate diagnosis and give us an opportunity of adopting suitable treatment. I believe that by bearing these conditions in mind, many kidneys can be saved in early childhood which later in life would be entirely destroyed.

Considering the subject according to its anatomical location, the first common site for urinary obstruction is the uretero-pelvic junction. A stricture may occur at this point which may be the result of an abnormal congenital narrowing or of an inflammatory process. It may be relived by ureteral dilatation, accompanied by lavage if there is an infectious process, or by a plastic operation between the ureter and the kidney pelvis. At this same site, obstruction may be caused by an aberrant vessel to the lower pole of the kidney, which crosses the ureter and impinges on it, or by ptosis of the kidney with the ureter fixed. Relief may be obtained by cutting the vessel or by the change of position of the kidney so that the vessel will not constrict the ureter or the pelvis. Where the urinary flow becomes obstructed at this point or lower, due to kinking of the ureter, the somewhat neglected operation of nephropexy will often give relief.

Owing to the normal, somewhat tortuous route of the ureter, the diagnosis of pathological kinks in its middle portion is more difficult to make, but that such occur is beyond question. The treatment of obstruction in this portion of the ureter must vary in each case. Where pyelonephrosis is associated with it, ureteral catheterization with lavage is the form of treatment to try first, it being the simplest. A fair proportion of success may be anticipated. If this is unsuccessful, straightening of the ureter with nephropexy or other plastic procedure may give the desired result. In the adult, it has been recommended to dilate the strictures at the point of the kinks by means of bougies introduced through the direct cystoscope. This treatment is not feasible for the child owing to the small size of the urethra.

For strictures at the lower end of the ureter, the same general principles hold good; first, to try what can be accomplished by ureteral catheterization with lavage if pus is present. If this is unsuccessful suprapubic cystotomy should be done. By this route the lower end of the ureter can be further dilated or a plastic operation performed to enlarge it. In case of stone forming above a stricture at the lower end of the ureter, the obvious treatment is its removal by ureterotomy and treatment of the stricture afterwards, if necessary.

For megalo ureter, there is a great discrepancy of opinion as to its cause, and until that is definitely established, the treatment will not have become standardized. There are those who believe that for every megalo ureter, there is or has been an obstruction. Others believe that it is the result of a protracted inflammatory process causing loss of tone of the musculature and consequent dilatation. The condition seems to me very analogous to the megalo colon. These cases, I feel sure, exist without any demonstrable obstruction and I am likewise confident that the same is true in regard to megalo ureters. It would seem reasonable therefore, to attribute this condition to a congeni-

*Read before the Rhode Island Medical Society June 7, 1928.

tal neuro-muscular defect. If this theory is correct, there is no treatment that will prove entirely satisfactory. Nephrostomy to divert the stream of urine, but for its obvious disadvantages, would seem to be the most logical form of treatment. Cystotomy and leaving a large sized catheter in the ureter or ureters for any protracted period seems undesirable on account of the ureteritis which such a procedure must cause. In spite of this, some cases have been improved by this procedure. Some of these cases are likewise improved by the administration of hexylresorcinal or by pelvic lavage.

Double ureters require treatment only when they cause obstruction, hydronephrosis or pyelonephrosis. When treatment is necessary, a type of operation must be devised to meet the requirement in each individual case.

Out of approximately two hundred cystoscopies and pyelograms which we have done at the Children's Hospital in the last few years, I have selected a group of slides which demonstrate some of the problems we encounter and the methods we use in dealing with them.

THE NEW APPEAL

By Wm. S. Sherman, M.D.
Newport, R. I.

Are we a nation of hypochondriacs, are we just naturally sick, or could it be that our sorry state of health is, after all, merely a state of mind finding expression through the pen points of frowning writers and planners of advertisements? Or, again, could it be that we are not actually so sick as we are supposed to be?

Never before in the history of advertising has the appeal to health been such a fetish as it is today. Every copy writer in the Republic seems suddenly to have acquired the degree of M.D. and to have taken upon himself the business of prescribing panaceas for the world's ills. Reading today's advertisements and accepting their inferences, one may be forgiven for suddenly turning pale, grasping his pulse, rushing to a mirror, sticking out his tongue and saying "Ah-h-h!"

In my impubic days of advertising I learned of appeals to appetite emotion, pride, ownership, taste, smell, sight, touch, safely, love, danger, and myriad more. Health did not predominate as it does today—perhaps because the average Americano liked nothing more than to pound his inflated chest and to boast of vigor and vitality, virility and vim. But now—Alas!—we are ill. We are sick, pale, anaemic and neurotic. We are possessed of complexes too numerous to mention.

And the doctors are helpless. Medical science has proved its futility. Surgery is of no avail. Only the nation's advertisers can save us!

Are you constipated? The perfect freedom for exercise given by this new union suit will cure you. Have you heart-burn? Drink this orange juice, eat that prune, taste this cereal, specify those canned peaches, chew this gum, wear that belt or burn this light and you are cured.

Do you suffer from hay fever, gout, rheumatism, nervousness or frequent colds? Ah! Take up golf and use these clubs; take up tennis and use this racket; try motoring in this new light six; buy a canoe, a rowboat, a pair of boxing gloves, a saxophone; have this new glass put in your house to catch the ultra-violet rays of the sun; get your wife an electric toaster, refrigerator, or vacuum cleaner; read this book or eat this sauerkraut and you'll be saved. Oh, Death, where is thy sting!

And if none of the foregoing solves your problem, write to McFadden.—(Ed.)

SOCIETIES

The Rhode Island Medical Society

A meeting of the House of Delegates was held February 26, 1929 at 4:30 P. M., at the Medical Library, Dr. A. H. Harrington, President, presiding.

The first business of the meeting was consideration of the National Better Health Bureau, Inc. This is a purely commercial organization which has opened headquarters in Providence for the purpose of giving physical examinations to individuals. It is fostered by insurance men who have obtained the services of a Medical Di-

*Read at the April (1928) Meeting of the Newport County Society.

rector, Dr. William P. Emerson, formerly of Boston, and an Associate Medical Director, Dr. Rigoni, formerly of Buffalo, N. Y. Dr. Emerson was invited to appear before the House of Delegates to explain the make-up and purposes of his organization, and he stated that it is a straight commercial proposition; that applicants for examination are given a complete physical examination and investigation of their mode of living, and that no treatment is carried out by the institute. Applicants showing to the examiner deviation from the normal are referred to their family physician for treatment. He stated that the charge for the so-called basic examination is $20.00 which includes a general physical examination, nose and throat examination, and an urinalysis. Blood examinations, blood chemistry determinations, X-ray examinations and other special investigations are made with an extra charge to the applicant. Dr. Emerson was questioned along various lines by many members of the House of Delegates and it developed that the National Better Health Bureau, Inc. is a purely commercial enterprise modelled somewhat after the plan of the Life Extension Institute and it was the consensus of the opinion of the House of Delegates that no action was required in this matter any more than any other commercial enterprise which might establish itself in Rhode Island. It seemed wise to the officers of the Society that the Fellows of the Society be informed of the nature of this organization and it was with this purpose in mind that the Director of the organization was asked to appear before the House of Delegates.

The Committee on Group Insurance appointed May 24, 1928, made the following report, and it was voted that the report of the Committee be accepted and the committee continued

"The Committee appointed at a meeting of the House of Delegates, of the Rhode Island Medical Society, on the 24th day of May last; 'Investigate and report on "Group Insurance"', offer the following report:

"The first action taken by your committee, was to send a Questionaire to each Fellow of the R. I. Medical Society as follows:

First: Do you carry, or did you ever carry liability insurance?

Second: If not carrying insurance now, why did you drop it?

Third: Would you probably join in group insurance at reduced rates, if they can be secured by the Society?

Fourth: Have you had any suits brought against you for malpractice?

To this questionaire sent to 425 Fellows, replies were received from 300. Of this number, 237 have, or have had, liability insurance. Fifty-four do not carry insurance, and the larger part of this number were hospital men, public officials, or men not at present in active practice. A few who formerly carried insurance, did not at present carry it because of the recent increase of rates.

To the question: would you probably join in group insurance at reduced rates, if they can be secured by the Society? Two hundred and forty-seven replied, Yes. Fifteen were uncertain, but thought it probable that they would, 30 replied, No. In this latter number were the hospital men, public officials, and those not in active practice. To the question: Have you had any suits brought against you for malpractice? Two hundred and sixty-five replied, No. Twenty-two replied, Yes. Of those who have had suits against them, 11 gave the following particulars:

(One each)

"Was 22 years ago—case dropped." "Eight years ago."

"Eight years ago." "Five year ago." "Many years ago."

"Of no consequence." "Never come to trial."

"Adjusted for small sum." "Was settled."

"Settled out of court." "For a dog bite."

"Settled by Insurance Co. for $500."

In 11 cases no particulars were given.

With this information, your committee conferred with the agents of several Insurance Companies, and found but four or five who would write this class of insurance. Of these, we found one company who specialized in this class of Group Insurance, and who offered the best terms of any.

This company is the U. S. Fidelity & Guaranty Co., of Baltimore, Md., who write group insurance for about fifty medical and dental societies,

throughout the country, including the R. I. Dental Society, the Mass. Medical Society with two thousand members, the N. J. Medical Society, with one thousand members. Their Adjustor in R. I. is Mr. McCarthy, a man of much experience in this work, and their attorneys are the firm of Huddy and Moulton.

They agree never to settle a case except with the consent of the physician, and agree to fight any claim if the physician requests it.

Their premium for insurance covering $5,000 —$15,000 is $20.00 per annum. On X-ray and radium members, at 50% additional.

In carrying out the group insurance, they would like a list of membership in the Society, and they would attend to the taking of applications and the collections of premiums. If their proposition is accepted by the Society, they suggest that a letter be sent to the members, co-operatively prepared, that the members may avail themselves of the new coverage as fast as their present policies expire, or to come under the group policy plan at once, which ever they prefer.

Your committee recommend that the Rhode Island Medical Society, accept the terms of the U. S. Fidelity and Guaranty Company, for Group Insurance, for its Fellows.

Your committee further recommends, that a Standing Committtee, consisting of one member from each District Society be appointed, to be called the Defense Committee, and that the Fellows of the Society be instructed in case of any suite being brought against them for malpractice, to notify the Secretary of the State Society of such action, who in turn will notify the member of the District Society who is member of the Defense Committee of the action against a member of his local society.

The function of the member of the Defense Committee, would be to fully investigate the case, and act as medical adviser to the attorneys and defendant, assisting in every way possible. He could see the physicians concerned, and talking the matter over as a mediator, might in certain cases head off court action. If there should be real liability, his efforts would frequently result in a fair settlement, and if there were no just liability there would be no attempt at settlement and a stronger defense position obtained.

The fact that a member of the R. I. Medical Society's Defense Committee was working in a case, would be somewhat deterrent to the class of attorneys who frequently press cases to trial not on the merits of the case but for the purpose of getting fees.

There are other advantages in having such a committee which will undoubtedly occur to all members."

Respectfully submitted by

Dr. Julian A. Chase, *Chairman,*
Dr. Roland Hammond,
Dr. R. Morton Smith.

Report of the State Committee to the New England Medical Council

The first question that was discussed was that of reciprocity. The committee of which Dr. Birnie, president of the Massachusetts Medical Society, was chairman, reported that unequalified reciprocity seemed impossible because of the difference in the laws in the various states. In many of the states it is necessary to give examinations. Individual endorsement, however, is a method that can be used and the Council voted unanimously to endorse the principle of individual endorsement and to send such statement to the Medical Societies and the State Boards of registration of the New England States. This action is particularly pleasing to the members of the Rhode Island delegation as this method has been indentified with Rhode Island. Dr. Richards of the State Board of Health worked on this matter for some time and is mainly responsible for the blank which has been adopted by many states and is used as the model for other states. Furthermore, Rhode Island was the first state to adopt this method after it had been recommended by the Federation of the State Medical Boards.

The rest of the meeting was taken up with the discussion of the nursing problem. That there is such a problem was proven by the presentation by Dr. Howland of the Peter Bent Brigham Hospital and the subsequent discussion. Many interesting facts were given relative to the growth of nursing—namely that from 15 schools

in 1880 the increase to 2155 schools in 1926. Also that in 1900 there was approximately 1 nurse to every 10 physicians; at the present time the ratio is from 15 to 20 for every 10 physicians. That there were 20,000 new nurses graduated every year and in a very few years there would be 1 nurse for every 300 people in the whole country.

The Committee on grading schools is still studying the problem and has already made a preliminary report.

Dr. Norman MacLeod
Chairman

The Secretary reported that a Bill had been introduced in the National House of Representatives to extend the operation of the Sheppard-Towner Act by means of a provision which greatly increased the autocratic powers of the Children's Bureau in the Department of Labor. A letter has been received by the secretary from Dr. W. C. Woodward, Director of the Bureau of Legal Medicine and Legislation of the A. M. A. requesting that the protest of this Society against enactment of this Bill be lodged with the Congressmen from Rhode Island. In view of the fact that the Sheppard-Towner Bill has been the object of intense study on the part of the Representatives of the A. M. A., and that the A. M. A. through its House of Delegates has opposed extending the life of the Sheppard-Towner Bill which will otherwise expire on June 30, 1929. The House of Delegates of the R. I. Medical Society voted to instruct the secretary to make such protest on behalf of the Society to the Representatives at Congress.

The Secretary called attention to the fact that the portraits hanging on the walls of the Medical Library were badly in need of cleaning, and that modern electric outlets were needed in the auditorium. It was voted that these matters be referred to the Board of Trustees of the Library Building.

Adjourned.

J. W. Leech, *Secretary*

The regular quarterly meeting of the Rhode Island Medical Society was held at the Medical Library, March 7, 1929, with the President, Dr. A. H. Harrington, in the chair.

The minutes of the previous meeting, and of the House of Delegates were read by the Secretary and approved.

A report of a meeting of the New England Medical Council was presented by Dr. Norman MacLeod.

The following papers were read: "Cancer Research Past and Present," Herman C. Pitts, M.D.; "The Massachusetts Cancer Program," Herbert L. Lombard, M.D., Chief, Cancer Section; "Organization and Methods of Treatment at Pondville Hospital," Isaac Gerber, M.D.

The subjects of the three papers was discussed by Doctors Pitts and Richards.

The President called attention to the introduction of a bill to amend the Workmens' Compensation Act by the terms of which the right of an injured employee to choose his own physician is not conserved for the employee save in the event that the employer refuses to furnish medical or surgical aid. The opinion was expressed by several Fellows that this will work a hardship not alone upon the employee who may be injured but also upon the medical profession as there will be a tendency to concentrate the care of such injured employee in the hands of relatively few practitioners. It was voted that the Committee on Legislation, State and National, be empowered to urge that the amendment be so altered as to conserve for the employee the right to choose his own physician.

The meeting was adjourned after which collation was served.

J. W. Leech, *Secretary*

HOSPITALS

The Memorial Hospital

Regular monthly meeting of the Memorial Hospital staff held Thursday, evening, March 7, 1929.

Meeting called to order by Dr. J. L. Wheaton, President, at 9:20 P. M.

Records of the previous meeting read and approved.

President Wheaton reported that the report of the Committee on Entertainment filed at the last Staff meeting had been brought before the Executive Committee of the Staff and is now under consideration by them.

He further stated that the next meeting will be in charge of the Medical Service of the Hospital.

The paper of the evening given by Dr. Roland Hammond and illustrated by motion picture films, the subject "The Teaching of Orthopedic Surgery for Nurses," was very ably and clearly handled and the Staff expressed marked appreciation of the difficult but thorough presentation of Dr. Hammond's subject.

There were eighteen members present. Meeting adjourned at 10:08 P. M.

Stanley Sprague, M.D.
Secretary Pro Tem.

ANNOUNCEMENT

American College of Physicians

The American College of Physicians will hold its Thirteenth Annual Clinical Session in Boston, April 8-12. Dr. Charles F. Martin, Dean of the Faculty of Medicine, McGill University, is President of the College this year, and Dr. John H. Musser, Professor of Medicine at Tulane University Medical School is President-Elect and will be inducted to the Presidency toward the end of the Boston meeting. Dr. James H. Means, Jackson Professor of Clinical Medicine at Harvard Medical School and Chief of the Medical Service at the Massachusetts General Hospital is General Chairman of all Boston Committees having charge of arrangements for the Clinical Session of the College in April.

The program provides hospital visits, clinics, demonstrations and ward-walks during the forenoons at fifteen different Boston hospitals, and for general scientific sessions each afternoon and evening in the Assembly Room of the Hotel Statler, which will be headquarters. Eminent authorities in their special lines will present the results of their work before an audience competent to appreciate the value of the contributions.

A Symposium on Deficiencies will take place the first evening of the Session, and will be of particular interest because of the fact that deficiencies are nowadays assuming a far more wide-spread and important role than had heretofore been anticipated. They have come into their own as factors producing acute and chronic disease on a par perhaps with infections. The Committee has secured for the Program men who can speak with authority on a variety of aspects of this important subject.

Another special feature is a review of the Present Status of Vaccine and Serum Prophylaxis and Therapy, designed to give the Internist a rapid survey of the field. The speaker, Dr. Benjamin White, of Boston, is an authority on these subjects and can give the high spots in rapid and yet forceful fashion.

The Annual Banquet of the College will be held Thursday evening, April 11, when Dr. George E. Vincent, President of the Rockefeller Foundation, will deliver the chief address. The Convocation, for the conferring of Fellowships, will take place Friday evening, April 12. Dr. Charles F. Martin, of Montreal, will deliver the Presidential Address.

Programs and details concerning reduced fares, admission, etc., may be secured from the Executive Secretary, E. R. Loveland, 133-135 S. 36th Street, Philadelphia, Pa.

BOOK REVIEW

Diabetic Manual for Patients, by Henry J. John, M.A., M.D., F.A.C.P., M.R.C., C. V. Mosby Co., Publishers—

This book is solely for patients. By using frequent analogies, charts and colored illustrations the subject is kept unusually clear for the reader. The book should find a wide use because of its simplicity, and will be particularly valuable to diabetic clinics. Throughout the book there is a vein of hopefulness for patients suffering from diabetes that is refreshing.



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B. RAYMOND HOOBLER, M.D., DETROIT
Journal A. M. A., August 4, 1928

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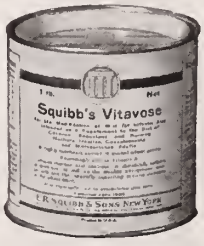
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MAY 1929

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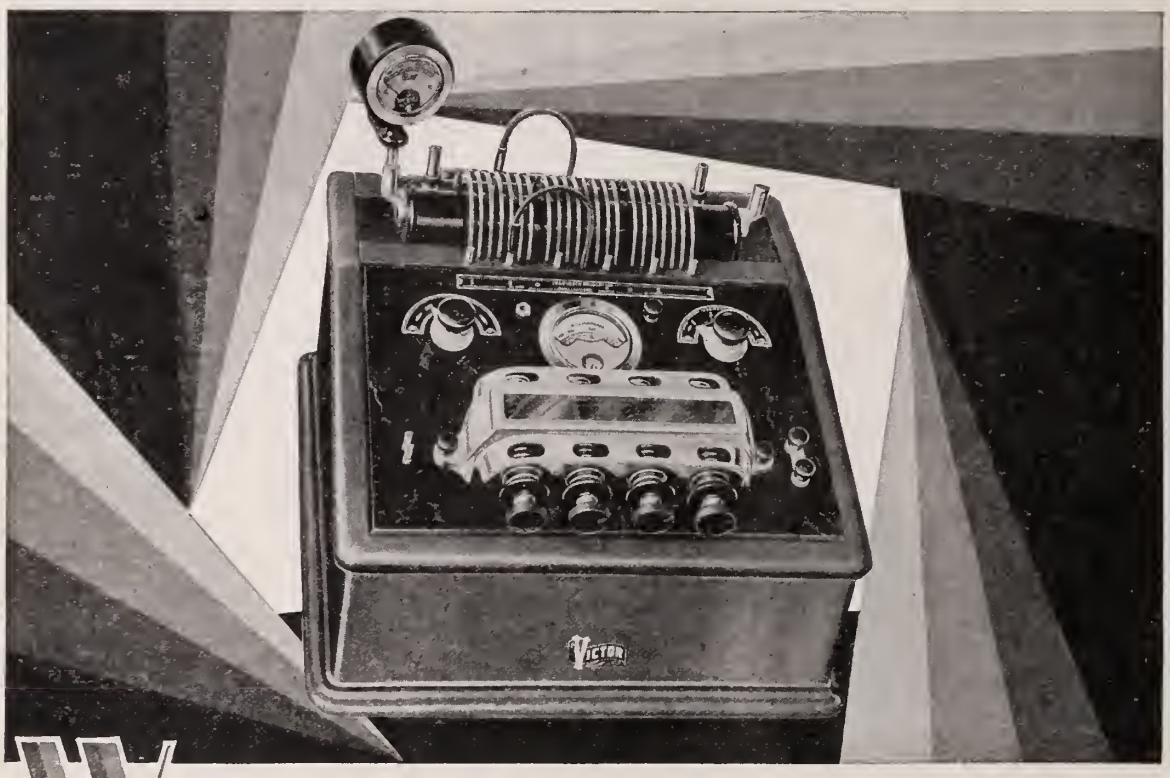
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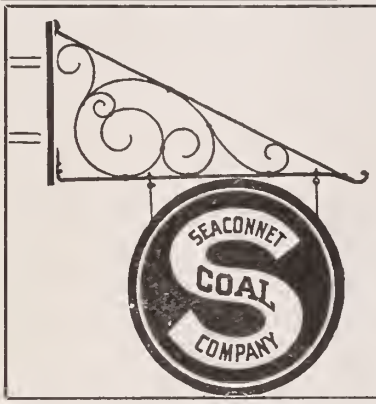
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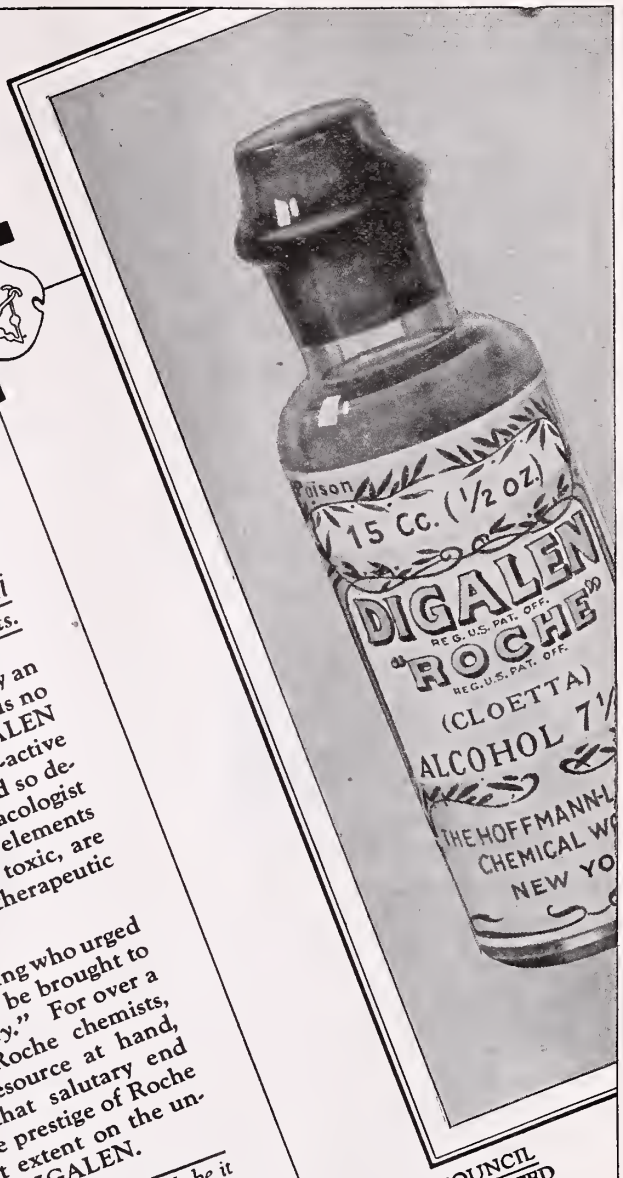
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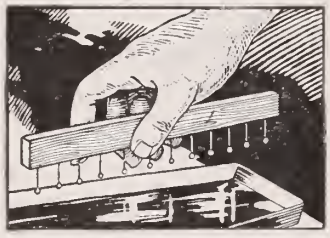
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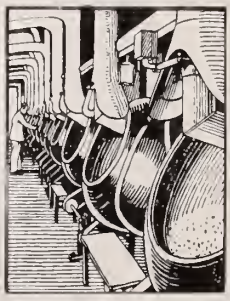
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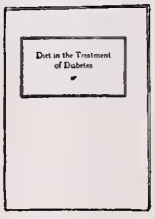
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ORIGINAL ARTICLES

SPINAL ANESTHESIA*

By Eliot A. Shaw, M.D.; F.A.C.S.
Providence, R. I.

My part on this program is to briefly describe the Pitkin Technique of Spinal Anesthesia; its indications and contraindications, and the effects obtained.

The Pitkin Solutions and Technique is so called having been developed by Dr. Pitkin of New Jersey. H. A. Metz Company markets the solutions under the name Spinocain. One ampule contains 1 cc. of 5% ephedrin and 1% novocaine, while a second ampule contains 200 mgs. of novocaine and 2.2 mgs. of strychnia sulphate in 130 mgs. of starch paste, together with 324 mgs. of alcohol in normal saline to make 2 cc. In deciding upon suitable anesthetic for abdominal operations, particularly upper abdominal operations, one is always confronted with a serious problem. Ether could be given and sufficient relaxation obtained for both upper and lower abdominal operations, but in so doing the patient is subjected to the injurious effects of deep ether anesthesia, which predisposes to surgical shock, post-operative lung complications, and injuries to parenchymatous organs, i. e., heart, liver, kidneys, and the blood.

The patient may be protected in some measure by using some other anesthesia, such as regional or gas oxygen, or a combination of both, but in so doing the anesthetic danger is lessened while the surgical danger is increased, for in these forms of anesthesia less satisfactory relaxation is obtained. The anatomy, as a consequence, is not so clearly exposed, with a loss of accuracy and speed.

Operative conditions with Spinocain used as a spinal anesthesia offers a satisfactory solution in certain types of cases. The relaxation is better than with other anesthesias, the breathing of the patient is quiet and shallow, the intestines are contracted, the post-operative condition of the patient is distinctly better than with ether.

*Read before the Providence Medical Association November 5th, 1928.

The chief improvements in Pitkin's Solution or Spinocain over other anesthetic solutions used in the spinal canal is, first, the use of ephedrine. This drug is an alkaloid obtained from the Chinese drug Ma Huang, and is closely related to epinephrine in its action, except that ephedrine's action is much more prolonged in that it maintains the blood pressure satisfactorily in the great majority of cases.

Secondly, Spinocain is a non-diffusible or viscid solution. This tends to hold the anesthetic drug at the point desired and prevent diffusion into other parts. By holding the drug at the desired point we may obtain a deeper and longer anesthesia, and by delay in diffusion action of the anesthetic drug, the prevention of alarming symptoms is obtained and likewise time is allowed to move the drug to the desired point in the spinal canal.

Another improvement in the Pitkin Solution is the use of a solution with a specific gravity lighter than spinal fluid. This fact has the advantage of also lessening diffusion.

On the other hand, Spinocain has been said to be dangerous, and causes undesirable post-operative complications. Without doubt, with improper selection of cases, improper technique, or inefficient care during the anesthesia, complications may result. With proper discrimination and selection of cases the results are good. Occasionally a failure to produce a satisfactory anesthesia may result. As has been said, in the use of Spinocain we are dealing with a solution of a different specific gravity from spinal fluid, which can be run up to a desired level by proper position of the patient, and so failure to get proper location should be reduced to a minimum. The instance in which this is apt to take place has been noted when it is that the anesthesia is high enough for the particular type of operation, but where progress of the operation proves not. In some instances it is impossible to puncture the dura and obtain spinal fluid—this happens in individuals with spinal arthritis, or a rigid spine.

The anesthesia cannot be accurately fitted to the length of the operation. The dose given and operation started, the length of the anesthesia cannot be changed, and the length is uncertain and

varies with different individuals. Statistics, however, have shown that from one hour to one and one-half hours is the average length of time of anesthesia—this time will usually permit of most operative procedures. If the operative time runs beyond the length of anesthesia, nitrous oxide may be given without seriously affecting the patient.

Technique

Food should be withheld before spinal anesthesia, the same as before a general anesthetic, since vomiting may occur during the operation, and also because a supplementary general anesthetic may be necessary. The lower bowel should be emptied by enema, since spinal anesthesia relaxes the sphincter and contracts the intestines. A preliminary narcotic is of great help. This can be determined according to the age, vigor, and temperament of the patient.

Morphine grs. ¼ and 1/150 of scopolaium is usually given one hour before operation hypodermatically. This does not intensify the anesthetic.

The patient should lie upon the table on the right side with knees flexed upon the abdomen, head bent forward and back "bowed" out. The skin is painted with iodine over wide area of the back from the 8th dorsal to the sacrum, the hair having been previously shaved.

Pitkin recommends injection for upper abdominal anesthesia between the 12th dorsal and 1st lumbar; for lower abdominal anesthesia, between 2nd and 3rd or 1st and 2nd lumbar interspaces; although in reality it should make no difference whether the injection is a low lumbar or between the 12th dorsal and 1st lumbar, since the length of anesthesia is regulated by the tilt of the table.

If an anesthesia is desired in the lower extremities or perineum, a Trendelenberg position of from 20°-25° is assumed. A 10°-15° Trendelenberg will keep the anesthesia below the umbellicus. A flat table or 5° Trendelenberg will allow the anesthesia to ascend to the costal margin.

After the site of injection is selected, with a hypodermic needle and Luer syringe 1½ inches in length, a solution containing 1 cc. of 1% solution of novocaine with ephedrine is injected under the skin. The lumbar puncture is made through the center of this injection. The lumbar puncture needle should be about a 22 gauge of rustless material, preferably nickloid. Nickloid is also less likely to break. The needle is about 3 inches in length. The point is conical in shape, the advantage in a conical point being that a trap-door effect is cut in the dura that is closed on withdrawing the needle, and this prevents leakage of spinal fluid and so post-operative headache. The cannula is withdrawn and 30 gtts. of spinal fluid is allowed to escape. The injection of Spinocain should not be made unless spinal fluid escapes from the needle; the spinal fluid should be clear, and under normal pressure. The Spinocain solution which has previously been drawn into a 2 cc. Luer lok syringe from the ampule is slowly injected into the canal.

Without detaching the needle, slowly refill the barrel of the syringe with the spinal fluid and reinject. Unless this is done, anesthesia may be delayed 10°-15°, or may be incomplete and not last the desired time. The withdrawal of the spinal fluid tends to expand the solution and slightly mixes it with the spinal fluid and increases the volume sufficiently to surround the cord at the point of injection.

The needle is then withdrawn and a sterile dressing placed over site of injection. With the escape of 30 gtts. of spinal fluid, the same intradural pressure which prevailed before injection is maintained. Should a large amount of spinal fluid escape, there is a possibility of the anesthesia ascending higher than desired. This would naturally cause a marked drop in B. P. and also tend to produce a severe post-operative headache. Therefore, the Spinocain should be placed in a syringe before beginning the lumbar puncture. The object in having the patient on the side in 5° Trendelenberg is to keep the solution which is of low specific gravity well down in the canal. If the anesthesia does not extend high enough, the table may be leveled or the head elevated slightly until the height desired is reached. Anesthesia should be tested not later than 2 minutes after injection, and its progress watched closely so that should it not approach the desired point the table may be elevated or lowered as the case may demand.

Sise, in his article, states that in all lower abdominal operations he plans to have the level of anesthesia at the ensiform, while for upper abdominal operations he has the level of anesthesia at the fourth rib.

The duty of the anesthetist during an operation under Spinocain consists in careful blood pressure

readings, noting the general condition of the patient, and attending to minor discomforts. Some stout people are apt to get cyanotic, particularly in the Trendelenberg position; such patients do well with oxygen. If the respiration is depressed, the face cyanosed, and blood pressure low, carbon dioxide will work an improvement.

The most common condition demanding watchful care is the fall in blood pressure. This brings up the question of what should be considered an undue drop. No set rule can be made, since one patient may be prostrated by a drop in blood pressure which has little apparent effect on another. In general, aged and sclerotic are more affected than the young and elastic. Sise and Pitkin feel that a systolic pressure of 80-90 is satisfactory; 60-70 is questionable; and a blood pressure 50 is distinctly unsatisfactory, and below 40, dangerous. Sise does not feel that it is well to try to maintain the blood pressure at the original level unless it is maintained by the ephedrine. A moderate drop in blood pressure does no harm. It is not like the drop of shock. If the drop in pressure is such as to require treatment, one would naturally think of giving a second dose of ephedrine. This is not satisfactory, however, and may be dangerous, since the drug is more effective prophylactically than therapeutically. In patients who have myocardiac weakness, a second dose of ephedrine may place too great a strain on the heart due to added peripheral resistance. Ephedrine in moderate doses may cause extra systoles and acute cardiac dilatation. Salt solution intravenously is the treatment that combats the low fall in blood pressure.

The proper use of ephedrine, and salt solution, calls for good judgment on the part of the anesthetist. It has been recorded that fatal results have followed either large doses or repeated doses of ephedrine. Two cases are reported in which ephedrine was given in repeated doses totalling 150 mgs. Both cases became cyanotic, fibrillated, and although the pressure was at or above normal, died in about 12 hours.

Should paralysis of respiration take place, it may be handled by artificial respiration, using enough oxygen to keep the color normal.

Babcock, who has had a varied experience in spinal anesthesia, more so, without doubt, than any man in America, formulates these three rules for safety:

1. There should be a proper selection of cases;
2. The patient should be watched carefully during the anesthesia;
3. Proper methods of resuscitation should be employed when necessary.

Under the first rule, patients in poor general condition, whether from the result of shock, hemorrhage, or sepsis, or whether the result of prolonged illness, are usually poor risks for spinal anesthesia. Ephedrine contracts the arterioles and stimulates the heart. If the patient's general condition, together with cardiac condition, is not sufficiently good to handle the increased peripheral resistance which results or to respond to stimulation, alarming and possibly fatal results may follow.

Under rule No. 2, it should be the duty of an experienced person to watch carefully the patient during the operation, and as long thereafter as the patient requires attention. Regular frequent observations of the patient's blood pressure, pulse, color, and breathing should be taken. If this is done, and the patient experiences collapse or respiratory paralysis, it will be immediately noted, in time to give adequate treatment.

The last rule demands adequate equipment at hand for the treatment of urgent symptoms.

In a series of 15 cases under Spinocain anesthesia, there were no deaths (there are two cases not reported in this series in which spinal puncture was attempted and convincing entrance not obtained, for which reasons spinal anesthesia was abandoned;) the anesthesia as to height and duration in all but one case was satisfactory. Of this series, there were five appendectomies, one repair of a perforated duodenal ulcer; three bilateral hermorraphies, one femoral hermorraphy, one hysterectomy, one right hemorraphy, one mid-thigh amputation, one exploratory laparotomy, one cholecystectemy. In four cases, nausea with some vomiting was present, but only a transitory condition. The greatest fall in blood pressure was 40 points—in all cases the blood pressure returned to approximately its normal level as estimated before the injection of Spinocain after an average drop of from 15-20 points occurring about 10-15 minutes after injection of Spinocain.

The average height of anesthesia was at the costal margin.

In one case, headache was present to a marked degree 15 minutes after injection, and persisted throughout the operation. In all cases except one the post-operative recovery was without note; in the case of the one exception, the patient died in 48 hours following a complete hysterectomy—this patient, in my opinion, died from the shock of the operation.

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Sise, L. F.; New England Jour. Med. Vol. 199, No. 2 (1928).

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FREDERICK N. BROWN, M.D., *Editor*
309 Olney Street, Providence, R. I.

CREIGHTON W. SKELTON, M.D., *Business Manager*
166 Broad Street, Providence, R. I.

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Roy McLoughlin, President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

CLINICO-PATHOLOGICAL CONFERENCES

The modern hospital, whether connected with a medical school or not, has three main functions: first, the care of sick patients; second, the education of those who are to care for these patients; and third, the study of disease and methods of combating it. The very existence of a hospital is evidence of the fulfilment of the first function; too often, however, this is conceived to be the only proper function without the realization that the lack of the other two makes the completion of the first impossible.

The establishment of regular clinico-pathological conferences, held at the Rhode Island Hospital on alternate Tuesdays during the noon hour, marks a distinctly forward step in the development of the second function above mentioned. The plan of these conferences is similar to that followed in most teaching hospitals. The "case" to be considered is presented in full clinical detail by the member of the staff under whose care the patient came, this presentation including history, physical

examination and essential laboratory findings. Where the X-ray plays an important part, the roentgenologist then discusses the case from his point of view. Finally, the pathologist presents detailed pathological and post-mortem data. Such presentations, together with the discussion which they evoke, have proved of tremendous interest and are of great value in bringing about better understanding and co-operation between the various departments involved.

While these conferences have been initiated by the staff of the Rhode Island Hospital, they are in no sense limited to that staff, and any member of the profession will be welcome to attend and to take part in the discussion. In this way it is hoped that the teaching value of our clinical material may be more fully realized and made easily available; and this effort on the part of our oldest and largest hospital to enlarge its educational function should merit our whole-hearted commendation and support.

THE PRESS—AN APPRECIATION

Medical truths reach the public by but few channels: By the preaching of those qualified and by the newspapers. Offsetting these sources of the dissemination of the true faith are numerous false prophets who, perhaps unwittingly, but none the less truly lower the public intelligence by the propagation of false doctrines, heresy and schism. The public health, of course, depends upon private health, and those who reach individuals in practice are not usually teachers or preachers, and spend but little time in informing their patients as to matters other than the case in hand, and are, furthermore, too busy to linger and talk. It must be acknowledged that the principal informers of the public in matters medical are those newspapers who take it upon themselves to offer such vital and interesting information. In no other paper that we read is there anything like the space given to medical and allied sciences, nor is the material so good by a large degree as that given by the *Providence Daily* and *Sunday Journal.* Not only are the articles upon various ailments given in simple and direct wording, easily understandable by the average person, but the advice offered is consistent with the latest developments of medical science, without excursions into the visionary and the problematical. These brief synopses and answers to questions are of inestimable value to many thousands of people. Even to physicians they are of profitable interest, as the tendency of the times is to specialism, and interests collateral to one's particular line are often per force neglected and the recollection dimmed by lack of refreshing practice and clinical experience.

The thanks of the medical profession, as well as the public, are also due to the *Journal* for its publication of matters relative to water supply, sewage, and the governmental activities regarding these tremendously important functions of public and private health. There is hardly any other way in which we may learn what is going on with regard to needed reforms in sewage disposal of cities and towns, of the pollution of natural streams with their co-existing problems of fish and shell fish foods or of public bathing problems. Information along these lines is very difficult to obtain, and it is only possible by a large and highly trained organization such as is operated by a modern and efficient newspaper,—but always at the behest of those who direct its policies and interests.

THE MEDICAL LIBRARY

LIBRARY—A collection of books, pamphlets, etc., kept for reading and consultation; especially, such a collection arranged to facilitate reference, as by classification and indexing.

The origin of asepsis and of anesthesia, the development of surgery and of the specialties, the epochal discoveries of Roentgen and of Madame Curie, the work of O'Dwyer, the progress of serum treatment, and the many other lines of progress in medical science are all chronicled, step by step, in the volumes which make up the Rhode Island Medical Library. Through purchase, exchange and gift, the efforts of a few men of the past generation brought together this notable collection, one which could probably not be duplicated at the present time at any price.

The first name on the list of donors is that of Caleb Fiske, who, in 1855, started the collection with a gift of 72 volumes. George L. Collins donated over 1,000 volumes. Robert F. Noyes gave the valuable ophthalmic collection of his

uncle, Dr. J. F. Noyes. Horace G. Miller, who was chairman of the Library Committee for thirty years, donated his collection of books on the eye and ear, including invaluable files of journals on these subjects. Later, Charles V. Chapin gave to the library his collection of works on sanitary science, among the foremost in the country, and James H. Davenport donated a library of non-medical works by medical writers, the collection of which had been a life work. Other notable donations have been made by Usher Parsons, Timothy Newell, J. B. Tillinghast, Oliver C. Wiggin, George D. Hersey, and the Providence Athenæum.

During its first twenty years, the library was housed in the rooms of the Providence Franklin Society, in Arnold's Block, on North Main Street. In 1900, it was moved to rooms on the third floor of the Providence Public Library building. Then began a happy period in the life of the Medical Library. The quarters were light and spacious. The books were well arranged. Lists were posted on the cases to make it easy to find any book desired. Bound volumes of journals were arranged by states and countries, and could be found without the aid of a librarian. Here could be found late on any afternoon groups of physicians browsing among the books, and studying subjects of literary importance or medical interest. In 1909, the number of visitors who borrowed books was 1,296. Between 1903 and 1909, a card catalogue was prepared at considerable expense. The cards were carefully written and well arranged. They formed an efficient index to the library.

The present Rhode Island Medical Library building has been occupied since June, 1912. The stack room is of approved fire-proof construction. Eighteen double and three single steel stacks contain 2,000 steel shelves. The 6,000 feet of shelving for books is arranged in three stories. Iron staircases and a lift for books connect the three stories. In the stacks there is still room to provide for the natural increase in the size of the library for several years. The Miller and Davenport collections are housed in a separate room. In addition, some wooden book shelves have been erected in the reading room.

Somehow, on the way from the Public Library building to the new Medical Library building, the card catalogue, which had been prepared with such care and expense, lost step with the library, and the two have never since become synchronized. The catalogue is still a list of the books which were in the library in 1909, but does not aid in locating a desired volume. To make room for the wooden book shelves, the catalogue has been moved to a dark corner in the stack room, where it is lost and forgotten. This may be the reason why interest in the library has languished so that it is now rarely consulted by members of the Rhode Island Medical Society. The library building serves only as a meeting place for the medical societies.

Dr. Harvey Cushing has likened a medical library to a calorimeter, indicating the degree of activity in the medical profession in the community. We hope that the waning interest in the Rhode Island Medical Library does not indicate a corresponding decline in scientific progress in the Rhode Island Medical Society.

ATTENTION

Is especially called to certain activities of the R. I. Hospital staff, herein briefly outlined, by its committee; further reference to which will be found in the editorial columns of this issue.

The committee appointed to arrange for clinical pathologic conferences has the following to report.

The conference shall be held beginning Tuesday, February 12, and thereafter on the second and fourth Tuesdays of each month, at 12 o'clock (noon), in the large room off the pathology laboratories.*

The following procedure is suggested: (1) Clinical presentation; (2) Demostration of X-ray films; (3) Demonstration of post-mortem material; (4) Discussion.

The committee hopes that all members of the staff (active, consulting and courtesy) will make an effort to be present. Members of the medical profession of Rhode Island not on the staff are invited.

The following rules were presented to Dr. Rice and approved by him:

1. All internes and the visiting staff who are on duty are expected to be present if possible;

2. Internes shall not be available for ward rounds at this hour;

3. Operations shall not be scheduled for this hour except in case of emergency.

In order to get the conference started, the committee thought it best to prepare this definite plan. At the first meeting or later the staff shall make any changes that seem advisable.

RAYMOND G. BUGBEE,
ANTHONY CORVESE,
B. EARL CLARKE,
Committee.

*During June, July and August, the conferences will be omitted.

PROBLEMS IN DIAGNOSIS

CLINICAL-PATHOLOGIC CONFERENCE
Rhode Island Hospital, March 12, 1929

CASE NO. 1
Case reported by Dr. C. Gormly.

J. B.; age, 43; male, white, married; admitted Feb. 16, 1929.

C. C.: Pain in abdomen, belching of gas, vomiting, substernal discomfort.

P. I.: Ten days before admission, after eating, patient noticed peculiar sensation under sternum, felt weak, vomited, and collapsed. For past 4 years has noticed these peculiar sensations substernally, often accompanied by belching of gas and pain in epigastrium. These attacks were aggravated by exercise. States that he was comfortable before eating, and that he could climb 3 flights of stairs without difficulty. After meals, the slightest exertion caused dyspnoea and substernal discomfort. Edema of ankles last spring only. Has had some hemoptysis and has lost some weight during past year. Has been somewhat hoarse for past 2 months. Nocturia 5-6 times.

P. E.: Cyanotic, dyspnoic, orthopneic, coughing up bloody sputum. Chest—moist rales and crackles; increased voice sound in right apex. Heart—sounds of poor quality; apex not visible or percussable; no murmurs. Extremities—no edema; blood pressure 100/80.

Blood Chemistry: Urea, 80; Creatinine, 2.0; Wasserman, negative; Hinton, negative.

X-ray: Findings consistent with Pul. Tbc.

E. K. G.: Marked myocarditis. Patient improved somewhat. He could lie back in bed when previously he had to lean forward. Color improved. Much more comfortable. On the 6th day of admission, became suddenly quite cyanotic, had marked dynpnoea, and died very suddenly within 20 minutes.

Discussion: The discussion was opened by Dr. Fulton. He and others brought out the following points. The age was against coronary occlusion, but did not rule it out. The electro cardiogram is usually diagnostic in coronary occlusion. It this case it only suggests it. If possible, the patient's former physician should have been consulted to learn whether he formerly had a high blood pressure, etc. In coronary occlusion it is necessary to make the diagnosis early if treatment is to be properly carried out. Fever and leucocytosis are frequently present in coronary occlusion.

Dr. Gormly then mentioned some of the points of differential diagnosis between angina pectoris and coronary occlusion. In angina the patient is tense and immobilized, while in coronary occlusion he is restless. In angina the blood pressure remains high, while in coronary occlusion it falls. In angina the pain involves the left bronchial region and the jaw, while in coronary occlusion it spreads across the chest and involves both arms. Nitrites relieve angina, but have no effect in occlusion. In coronary occlusion there is leucocytosis fever and a pericardial friction rub. These are absent in angina. The longer duration of the attack also favors coronary occlusion.

Dr. Gormly mentioned that some of the things to be considered in the differential diagnosis were angina pectoris, coronary occlusion, and acute upper abdominal conditions such as pancreatitis, perforated gastric ulcer and ruptured gall bladder. The clinical diagnosis in this case was coronary occlusion.

Diagnostic Problems

Pathological findings and diagnosis will be found upon another page

CASE NO. 2
Case Reported by Dr. A. M. Burgess.

M. S.: age, 40; female, white, widow; admitted March 4, 1929.

C. C.: Patient, irrational. History obtained from mother.

P. I.: Onset about 8 weeks before admission (1/15/29) characterized by malaize and physical weakness. About two weeks later she became definitely worse and had to go to bed. She was

seen by her physician, who said it was "congestion of lungs which settled in kidneys." Because of the abdominal pain, she was seen later by Dr. McCann, who referred her to hospital. There was some cough throughout illness, fever outstanding from onset, sweats frequent. Diarrhea one day, otherwise normal bowel action. One week before admission patient became irrational, which has persisted until present.

P. E.: T. 103, P. 140, R. 30. Pulse barely palpable. A well developed but poorly nourished white female adult lying flat in bed. Facial expression tired and anxious. Eyes sunken and general appearance almost moribund.

Lungs: P. N. resonant throughout. B. S. normal. Many moist rales in both bases.

Heart: No enlargement or displacement. Sounds are poor in quality, rapid but regular. Faint blowing systolic murmur at apex.

Abdomen: Tenderness questionable because of mental state. No rose spots seen. Generalized rigidity of wall making palpation of organs impossible.

Extremities: Tremor of hands and carphologia noticeable.

Mental State Irrational, muttering delirium, apathetic and dull.

Laboratory: Urine one week before admission revealed several pus cells, otherwise negative.

White blood count, 7,400. Blood culture, sterile. No other work done.

3/5/29: Patient gradually became weaker, temperature rising from 97 degrees to 106.5 degrees within 18 hours. Death promptly ensued.

Discussion: Because of the lateness of the hour there was no discussion.

Case No. 1

Demonstration of post-mortem material (Dr. Clarke):

Heart: The heart weighs 570 grams. There is hemorrhage into and fibrin on the epicardium at the apex. There is much sclerosis of the coronary arteries. At a point about 3 cm. from its orifice the descending branch of the left coronary artery is completely occluded. A large area of the myocardium of the apex and anterior wall of the left ventricle is yellow and necrotic. The endocardium in this region is covered with thrombus.

Lungs: The right lung weighs 1250 grams, the left lung weighs 1120 grams. Almost the entire lung substance is uniformly consolidated.

Liver, spleen, and kidneys: These organs all show marked chronic passive congestion.

Pathologic Diagnosis: Coronary sclerosis; *coronary occlusion;* infarction of myocardium; lobar pneumonia (bilateral); chronic passive congestion of parenchymatous organs.

Demonstration of post-mortem material (Dr. Clarke):

Case No. 2

Intestines: In the ileum, Pyers patches are swollen and ulcerated. Within the colon are very numerous swollen and ulcerated lymph nodules. These are most numerous in the caecum and adjacent portion, but some are seen well down in the sigmoid.

Mesentery: The mesenteric lymph nodes are enlarged and dark red in color. When cut across, some show necrosis.

Spleen: The spleen weighs 350 grams. It is red, soft, and pulpy.

Liver: The liver weighs 1650 grams. It is pale, opaque, and dull in color. Tiny areas of focal necrosis are seen.

Kidneys: The kidneys show marked cloudy swelling. The mucosa of the pelvis is congested and swollen.

Bacteriology: A pure culture of B. Typhosus was obtained from the gall bladder bile.

Pathologic diagnosis: Typhoid fever.

LETTER TO THE EDITOR

To the Editor

April 18, 1929.

In reading the obituary of the late Doctor James Raymond Morgan, March, 1929. I regret to notice the omission of an important line from the record of his service of the Rhode Island Hospital; line 18, of the second column, page 46, should include the item: *Surgeon to Department of the Skin, May, 1891,* to October, 1909.

Friends of Doctor Morgan will wish to write that line in their copy of the *Journal.*

Faithfully yours,

Charles H. Leonard.

OBITUARY

RANSOM HARVEY SARTWELL, M.D.

Ransom Harvey Sartwell, M.D., was born on the 30th day of December 1887, in the town of Mooers, Clinton County, New York. He came of a sturdy stock engaged in agriculture. His father, Edwin Sartwell, and his mother, Olive Adsitt, were both natives of Mooers. He was the youngest of a family of ten children. His preliminary education was received in the public schools of Mooers.

He decided to take up the study of medicine and in 1911 received the degree of Doctor of Medicine from the University of Vermont College of Medicine. Immediately following graduation, he began the practice of his profession in Ellenburg, New York, and after one year removed to Mooers, his native town, where he practiced for two years. At the end of that period he was appointed physician and surgeon to a Corporation located in Standish, New York.

During these years of his early practice he was considering the question of adopting some specialty for his life work. Psychiatry made its appeal to him and he sought an opportunity to enter this field, with the result that he applied for and received an appointment as a Junior Assistant Physician at the State Hospital for Mental Diseases at Howard, Rhode Island. He entered upon his duties in August, 1915, where he remained until September, 1917. While he had attracted the attention of the Administrative Board having charge, not only of the State Hospital for Mental Diseases, but in addition of the Penal and Reformatory institutions of the State. He was invited to transfer his activities from the State Hospital to these institutions as Resident Physician. These included the State Prison and Providence County Jail, the House of Correction, the Sockanosset School for Boys and the Oaklawn School for Girls.

The quality of his work in Rhode Island earned for him the commendation of officials, so that when sought as a senior assistant physician for the Foxboro State Hospital at Foxboro, Massachusetts, he was highly endorsed for this advancement by the Administrative Board of the Rhode Island Institutions, though reluctant to part with his services. This change appealed to him because it brought him more intimately in contact with clinical psychiatry. He filled this post from March, 1918, to September, 1923. While here he demonstrated his aptitude for dealing not only with the practical side of psychiatry as presented in the problems of individual and ward management, but his ability as an executive assistant, so that when an Assistant Superintendent was being sought at the Worcester State Hospital in Massachusetts, he was chosen for this responsible position, which he filled with entire satisfaction until August, 1924.

He was now invited by the Director of State Institutions with the authorization of the State Public Welfare Commission, to return to Rhode Island, this time as the Superintendent of the State Infirmary, an institution for the aged, the infirm, those afflicted with chronic physical illnesses, having in its population also mental defectives and in addition conducting a maternity department; this comprising a heterogeneous population, varying from infants to the very aged, the great majority of whom as is the case in most almshouses, are usually regarded as thoroughly institutionalized and with nothing in life except to eke out a more or less vegetative existence. Dr. Sartwell did not accept in the main these traditions but devoted much attention to furthering the work of social service among these people.

The results of Social Service as applied to the inmates of the State Infirmary were the returning to the Community of a comparatively large numbers of individuals, some of whom had been in the Institution from fifteen to thirty years who had been looked upon as permanently institutionalized, but who in numerous instances were returned to partial and in some instances even to a complete economic status.

At the National Conference of Social Work held in Cleveland, in 1926, he read a paper which attracted wide attention, the subject of which was "Social Research in an Infirmary," in which he advanced his belief that contrary to the usual conception there exisited in Infirmaries, Almshouses, city and town farms a real opportunity for reconstructive and worthwhile social work.

Another outstanding feature of his work while at this institution was the furthering of Occupational Therapy. This is described in a paper entitled, "Occupational Work in an Infirmary," which he was invited to read at the 10th Annual

Meeting of the American Occupational Therapy Association at Atlantic City, in 1926.

The next promotion was to the Superintendency of the State Hospital for Mental Diseases at Howard, Rhode Island, where he served under the same administrative commission as at the Infirmary. He entered upon his duties on October 1, 1926, his administration covering a period of a few days over twenty-seven months.

When he entered upon this office he had been prepared by an unusual training and variety of experience for this task. Some projects for material extension of the Hospital plant were under consideration when he assumed office. He showed at once his capacity in this direction by suggesting plans which have materialized into exceedingly attractive, commodious and home-like quarters for patients of the quiet chronic class, with facilities and equipment of the most approved kind for therapeutic procedures for this type of patient, but containing individuals, too often overlooked in crowded institutions, for whom disease has not closed forever the door to recovery.

In the administration of the internal affairs of the hospital there were progressive changes on foot which were beginning to add materially to the adequacy of the medical care and comfort of its patients.

The latter part of this administration was a most critical period in the history of the public institutions of Rhode Island, the work of which was the caring for the wards of the State of all types, and ages. For owing to certain episodes, such as may occur anywhere connected with the various activities of such work, these institutions, not one but all, were brought into a publicity more or less sensational which was calculated to arouse criticism and disfavor in the mind of many people. Dr. Sartwell lived through this trying period, still carrying on his work undaunted, with never a show of bitterness or resentment, but with an honesty of purpose and a courage born of his conscientious discharge of duties as he saw them.

In the meantime by his qualities of heart and mind and his solicitude for his charges, Dr. Sartwell had won the esteem of patients, their relatives and employees and officials with whom he was in intimate contact. Then there came a fateful evening which took him from this life without an instant of warning.

On the evening of the 11th of January, 1929, he had been a speaker at a local church at a "Fathers' Night" meeting. Returning to his residence in the hospital grounds in the latter part of the evening, while seated, alone at the moment, in the living-room of the lower floor, the window shades of which were not drawn, he was shot from without and instantly killed by a patient, who several months before had escaped from the hospital and whose whereabouts all this time was unknown, but who was found and taken into custody a few hours after this deed.

Dr. Sartwell, besides being a member of the Providence Medical Association had a membership in the following organizations: The American Medical Association, the American Psychiatric Association, New England Psychiatric Association, Massachusetts Medical Society, Massachusetts Society of Psychiatry, A Fellow of the Rhode Island Medical Society, member of the Rhode Island Medico-Legal Society, a director of the Rhode Island Society for Mental Hygiene and a member of the Rhode Island Society of Neurology and Psychiatry. He was secretary at the time of his death of the Rhode Island Alumni of the University of Vermont, a member of the Exchange Club of Providence and a member of St. Albans Lodge of Masons, Foxboro, Massachusetts.

Dr. Sartwell was twice married. His first wife deceased in 1920. Of this union there are two young children, a son and a daughter. His second marriage occurred in 1924. By this marriage he leaves a widow but no children. Of his near kin he leaves a brother, Dr. Edwin W. Sartwell, a practising physician of Peru, New York, and six sisters.

In preparing this account of the life of Dr. Sartwell there are encountred among those who have been thrown with him in official relations, in various social contacts, and as intimates, expressions of the highest respect, sentiments of warm regard, mingled with profound grief at the untimely and tragic closing of a life which gave promise of a long and conspicuously useful career; for we have to recall, that during the comparatively brief time Dr. Sartwell was permitted to work among us he exemplified in the highest degree a devotion to service for the unfortunates of all classes who

came under his care. His was an instance of life of exalted purpose united with a conscientious adherence to his convictions of right.

The underlying spirit that actuated this man cannot be better illustrated than by quoting from his published writings where he says, "SERVICE is even GREATER SERVICE when rendered to broken humanity, and those who need it most. One's manner and attitude must be tempered with a love for that cause which is as old as the human race, as noble as the CAUSE OF FREEDOM—THE CAUSE OF HUMANITY."

Among Dr. Sartwell's characteristics may be mentioned his ever present thoughtfulness for others, a spirit of generous consideration in his dealings with others, but never to the point of compromising discipline among his employees.

In the death of Dr. Sartwell there was brought to a close at the very height of physical and mental vigor a life of honest and persistent effort, manifesting qualities and attainments which presaged a career of unselfish devotion to a lofty cause. By his death the Providence Medical Association is deprived of a colleague who was a constant attendant upon its meeting and who while devoted to a special branch of medicine had a keen interest in following the progress of the day in general medicine. The Medical Profession is deprived of a member held in high esteem; Psychiatry, of one who dedicated himself with unstinted zeal to this special calling and the State of an official with an eye single to its service.

ARTHUR E. MARTIN, M.D.,
JOHN E. DONLEY, M.D.,
ARTHUR H. HARRINGTON, M.D.

March 4, 1929.

SOCIETIES

RHODE ISLAND MEDICAL SOCIETY

SPECIAL MEETING, HOUSE OF DELEGATES

A special meeting of the House of Delegates was called for March 20, 1929, at the Medical Library at 4:50 P. M., the President, Dr. A. H. Harrington, presiding.

The primary purpose of the meeting was to pass upon the Resolution adopted at the General Meeting in March which instructed the Committee on Legislation to oppose the passage of an amendment introduced into the General Assembly modifying the Workmen's Compensation Act, which fails to provide for the injured employee having the choice of physician treating his injuries. In order to clarify the situation, Mr. Cole of the Federal Mutual Insurance Company was asked to be present to present the point of view of the employer and the Insurance Company.

Mr. Cole stated that the costs of insurance to the employer had been greatly increased by reason of a small group of physicians carrying injuries to the extreme limit of the law, which in the opinion of Mr. Cole did not require so extensive treatment.

The question of the Insurance Company establishing clinics where all injured employees would be treated by physicians of the Insurance Company's choice was brought up in the discussion, and Mr. Cole firmly insisted that, so far as he could speak for his own company, there was no idea of there being established clinics for this purpose.

It was further brought out that it was the idea of the insurance companies to furnish a list of reputable physicians to whom injured employees could be sent in the hopes of eliminating the activities of physicians who are not desirable from the point of view of the insurance companies. It was not denied that the amendment specifically gave to the employer or the insurance company acting as his agent the right to choose the physician treating the injured employee.

Various discussions by many members of the House of Delegates was followed by a motion that the Resolution of the General Meeting instructing the Committee on Legislation to oppose the passage of this amendment was duly made and seconded and passed.

Adjourned.

J. W. LEECH
Secretary

PROVIDENCE MEDICAL ASSOCIATION

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Arthur H. Ruggles, Monday eve-

ning, March 4, 1929, at 8:50 o'clock. The records of the last meeting were read and approved.

A letter of appreciation from the niece of Dr. Davenport was read. Dr. Harrington read an obituary on Dr. Ransom H. Sartwell. It was voted to spread this on the records, send a copy to the family and one to the RHODE ISLAND MEDICAL JOURNAL. The President appointed as obituary committee for Dr. John F. Gannon; Drs. Henry J. Hoye, John G. Walsh and William H. Magill.

Dr. William B. Cutts presented a young boy with a very bad fracture of the elbow which by repeated trails at reduction and numerous X-rays resulted in almost complete recovery.

The first paper of the evening was by Mr. Phillip Drinker of the Harvard University School of Public Health. A demonstration of an apparatus for the prolonged administration of artificial respiration. He gave a talk on the methods of artificial respiration and stated that the pulmotor was valueless. Manual methods and the use of ninety-five percent oxygen with five percent of CO_2 is the usual method of rescue crews. A series of graphic charts showed the pressures obtained with his apparatus which he demonstrated.

The second paper by Dr. Charles F. McKhann of Children's Hospital, Boston, was on Infantile Paralysis and artificial respiration with moving pictures. He presented moving pictures demonstrating cases and showed the Drinker apparatus in use. In the true bulbar type the paralysis may be recovered from if the patient can be kept alive a few days and here the apparatus may be of great use. He gave a short talk on the diagnosis and spoke hopefully of the use of serum. The papers were discussed by Dr. Albert H. Miller, Dr. Herman C. Pitts and Mr. Drinker.

The meeting adjourned at 10:45 P. M. Attendance 58.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE, *Secretary.*

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Arthur H. Ruggles, Monday evening, April 1, 1929, at 8:55 P. M. The records of the last meeting were read and approved.

Frank B. Littlefield, Agostino Sammartino and Harvey E. Wellman, having been approved by the Standing Committee, were elected to membership. William T. Knoop having been approved by the Standing Committee, his application was discussed and he was elected to membership.

Dr. Herbert G. Partridge reported a case of Diabetic Coma with Toxemia of Pregnancy resulting fatally.

The president appointed as an obituary committee for Dr. John P. Fennessey:

Dr. William P. Buffum, Jr., reported a case of Rheumatic Heart Disease. This child had been demonstrated here by Dr. Robey at the meeting of the U. E. Heart Association two years ago. Dr. Buffum first gave a summary of the pathology and during the reading of the history elaborated on the characteristics of the disease. The child ten years of age had tonsillectomy at five and his illness developed at six. The patient appeared strong and hearty. The case was discussed by Drs. Mowry, Perkins, Fulton, Mathews, Wolff and Buffum.

The paper of the evening was on Heart Block by Dr. Thomas Conrad Wolff, Dispensary Physician, Johns Hopkins Hospital. He first gave a short summary of the embryology, anatomy and physiology of the mechanism controlling heart beat. Block may be caused by therapeutic agents as digitalis bodies, toxins or mechanical conditions as in rheumatic diseases, tumors, etc. He then discussed the types, aspects and degrees of block and reported a number of cases. Atropin, adrenalin, thyroid extract, barium chloride, rest and digitalis are all of value according to the type. Stokes Adams attacks mean death within three years at most. Any heart block means a narrow margin of myocardial reserve. Several electrocardiagrams were shown. The paper was discussed by Drs. Burgess, Fulton, Westcott, Mathews, Wells, Lawson, Ruggles, Perkins and Wolff.

The meeting adjourned at 10:50 P. M. Attendance 68.

Collation was served.

Respectfully submitted,

PETER PINEO CHASE, *Secretary.*

American Otological Society

American Otological Society Seeks $2,500,000 to Prevent Deafness

$500,000 to be Raised Before July 1

A plan, world wide in scope, for research into the cause, cure and prevention of deafness has just been announced by the American Otological Society. While a fund of $2,500,000 will eventually be sought to finance the complete plan, an immediate campaign to raise $500,000 by July 1st, and thus continue a program of research started through a grant by the Carnegie Corporation four years ago has been started. The campaign was launched at a dinner given at the New York Academy of Medicine by the Board of Trustees of the Research Fund on Tuesday, March 12th, to a group of interested laymen and physicians.

Dr. Edward B. Dench, New York otologist, in a brief address at the dinner, emphasized the social and economic handicaps which victims of deafness must face. He spoke of the inadequacy of the present scientific knowledge on the analysis of diseased conditions of the ear.

"In the pathological departments of all our hospitals in New York, and they are most excellently manned, I personally know of no pathological department in this city which could intelligently deal with microscopic analysis of the many conditions found in the temporal bone which cause progressive deafness. In other words, progress of investigation of this kind must be slow. To a certain extent it will be necessary to use our funds to train men in this special work, particularly in the preparation of specimens and in the interpretation of microscopical pathological conditions.

"It is important, first of all, to have exact histories with hearing tests on a large number of patients, both those suffering from some evident disease of the ear and also upon normal subjects. Then when the unfortunate comes to the postmortem, the clinical history, the hearing tests and the microscopical changes of the temporal bone will give us exact information."

In announcing the campaign, Dr. Arthur B. Duel, chairman of the Research Fund Board of Trustees, spoke of the necessity of completing the $500,000 fund by July 1st. He announced that Edward S. Harkness had already pledged a gift of $100,000 on condition that the remainder of a half-million dollar fund be raised by July 1st. Starling W. Childs of New York City has also pledged $25,000 with the same provision. The income from this fund will be used to continue work begun in June, 1926, under a grant of $90,000 by the Carnegie Corporation. This sum was given to begin and partially finance for five years a program of continuous and correlated research in otosclerosis, the hereditary form of chronic progressive deafness.

A report of the work done to date by the Scientific Committee of the Otological Society was read by Dr. Duel. "Under the personal supervision of a committee headed by Dr. Norval H. Pierce of Chicago, Illinois," he said, "a central bureau of research was established at the Academy of Medicine in New York City. Here all records of the activities are kept, and from here all communications and bulletins relative to the research are sent out.

"At the very beginning, the committee began the collection, abstraction and translation into English of all literature on chronic progressive deafness. This has just been completed to date, and is now in the press. The completed volumes will be available shortly, and will be of inestimable value.

"In addition, under the personal direction of various members of the committee, a number of studies by experts in research are under way in laboratories and hospitals.

"Professor Bast, at Northwestern University Medical School, has been making and will continue for years a study of the development of the bony capsule of the internal ear. Already many important facts hitherto unknown have been brought out. This has a direct bearing on our problem.

"Professor Wittmaack, of Hamburg, Germany, is working on apes in an effort to experimentally produce otosclerosis. If he should succeed we will be well on our way to the solution of our problems.

"Dr. J. C. Aub, of Harvard, and Dr. Eugene A. Crockett have studied selected cases of otosclerosis in all stages of development at the Massachusetts General Hospital by treatment by parathyroid extract and a balanced calcium diet. It is thought that the results warrant a hopeful outlook in cases taken at the very beginning of the disease. This is to be verified by a repetition of

the experiment at the Montreal General Hospital before it is given out. If verified, the work will be broadcast by literature from the Central Bureau to the medical profession throughout the world.

"At the George Williams Hooper Foundation for medical research at the University of California a study of bone changes in animals under calcium diet is being carried out.

"Professor Charles B. Davenport, of the Department of Genetics of the Carnegie Institution of Washington, is conducting a study of the genetics of otosclerosis in families. List of otosclerotics are being formed and an analysis of families with reference to the Mendelian aspects of the inherited defect is being carried out. Thirty-six families have already been listed and very important facts have already come to light. At least one hundred families will have to be studied before conclusions can be made. Eventually we hope to have a card index of every family in the country in which it will be possible to keep accurate statistics.

"Over two thousand hospitals throughout the country have been canvassed for autopsy material in cases which have had functional tests of hearing made before death. One hundred and fifty-seven hospitals are now co-operating in furnishing such material. Professor Sandor of Budapest has arranged to send anatomical material directly to us. An alliance with the laboratories of Johns Hopkins Hospital has been made whereby all such material in the east will be prepared for microscopical examination and study."

"The work we do in the future," Dr. Duel said, "will depend upon our success in raising a sufficient permanent fund to pay for laboratory workers to continue these activities which we have begun. If a sufficient amount is subscribed, we plan to enlarge our research to cover many other problems in otology."

Chancellor Elmer Ellsworth Brown of New York University, and J. DuPratt White, a lay advisor of the Board of Trustees, also spoke at the dinner. Mr. White stressed the point that research workers needed life-long training and should be relieved of financial worries in order to work to the best advantage. He declared that they should receive adequate pay in order to relieve their minds for the concentration which their work requires.

Rhode Island State Nurses Association

The Rhode Island State Nurses Association held its Quarterly Meeting on April 3rd in Ray Hall, Butler Hospital. The President, Miss Annie M. Earley, presided, and there were about 150 members present.

The objective and the work of the Rhode Island League of Women Voters was explained by the Director of that Organization, Miss Virginia Heal. Miss Heal outlined the various bills which have been under discussion during the 1929 session of the General Assembly, with special emphasis on the bills affecting public health; she also stressed the importance of a knowledge of what is going on in legislation, both State and National.

The Harmon Plan for Annuity for Nurses was explained by Miss Winifred L. Fitzpatrick. This plan is similar to the Teachers Insurance and Annuity Association organized some years ago by the Carnegie Foundation. The organization expenses of the Harmon Plan for nurses were provided by a gift from a fund of $50,000. by the late Mr. William E. Harmon, the first president of the Harmon Foundation. The plan is for a deferred annuity beginning at any age between 50 and 65 years, as elected by the nurse. Each nurse who joins the annuity plan makes a monthly deposit of at least $5. per month. The amount of the deposit may be $10., $20., $30., or more, but must be a multiple of five. Only registered nurses are eligible for membership in the plan, the important features of which are:—

1. A permanent monthly income, which once begun, continues throughout the remainder of the nurse's life.
2. No medical examination is required under the plan.
3. Convenience in accumulating a fund, and in receipt of income charges.
4. No loss or forfeiture of any deposits; no surrender charge.
5. Absolute safety for investment.
6. In case of any emergency the privilege of borrowing against or withdrawing all deposits at any time previous to the beginning of the annuity payments.
7. In case of death the immediate cash payment to beneficiary or estate the full credit balance on deposits.
8. An organization through which funds from legacies, endowments, gifts, excess interest, or

other sources, may be administered for the benefit of the nurse.

9. Membership in an association organized to assist registered nurses, guided by trustees and officers chosen by the members themselves.

The Metropolitan Life Insurance Company has offered to be the depository for the funds.

The following conventions and meetings of interest to nurses were announced and outlined by Miss Gardner:—

1. New England Division of the American Nurses Association to be held in New Haven April 11-13.

2. New England Health Institute to be held at Hartford, April 22-26.

3. International Council of Nurses to meet in Montreal July 8-15.

The President announced that the nursing organizations and individual nurses of the state had contributed $1478. to the work of the Committee on the Grading of Nursing Schools. This Committee is making a five-year study of nursing conditions and schools of nursing with a view to grading the latter. The first report of the Committee in the form of a book entitled "Nurses, Patients and Pocketbooks" deals with a study of the economics of nursing as conducted by the Committee. The chairman of the Committee is Dr. William Darrach, Dean of the College of Physicians and Surgeons, who with Dr. Winford H. Smith, Director of the Johns Hopkins Hospital, Baltimore, represent the American Medical Association on the Committee. The American College of Surgeons is represented by Dr. Malcolm T. MacEachern and Dr. Bowman C. Crowell, both of the American College of Surgeons, Chicago. The American Hospital Association is represented by Dr. Joseph B. Howland of the Peter Bent Brigham Hospital, Boston, and Dr. Burt W. Caldwell of Chicago. The American Public Health Association is represented by Dr. Charles E. A. Winslow, Professor of Public Health, Yale University, and Lee K. Frankel, Ph. D., Vice President of the Metropolitan Life Insurance Company. Members At Large on the Committee are Mrs. Chester C. Bolton, of Cleveland; Sister Domitilla of St. Mary's Training School for Nurses, Rochester, Minnesota; Henry Suzzallo, Ph. D., Trustee Carnegie Foundation for the Advancement of Teaching, New York City; Samuel P. Capen, Ph. D., Chancellor, University of Buffalo, New York; Edward A. Fitzpatrick, Ph. D., Dean of the Graduate School, Marquette University, Milwaukee, Wis.; W. W. Charters, Ph. D., Professor of Education, University of Chicago; and Dr. Nathan B. Van Etten, General Practitioner, New York City.

All nurses and doctors are urged to read this first report of the Grading Committee.

A demonstration of a home visit to a tuberculous patient was given by four members of the District Nursing Staff. The demonstration illustrated the co-operation received by the Association from various social agencies in Providence, and also the splendid results obtained by the admission of an incipient case of tuberculosis to the Wallum Lake Sanatorium.

Following the meeting and demonstration the Organization was the guest of the Nursing Staff at Butler Hospital, at a tea and a social hour.

HOSPITALS

Meeting of the Memorial Hospital Staff

Held April 4, 1929.

Meeting called to order at 9:15 by President James L. Wheaton, M.D.

Minutes of the last meeting read and approved.

The discussion of the evening being under the charge of the Medical Service of the Hospital, Dr. C. F. Sweet presented two cases.

(1) Amebic Dysentery. Discussion by Drs. Jones, Batchelder and Bourne. The latter gave an interesting resume of her experiences in China in the treatment of this disease.

(2) Duodenal ulcer. Discussion by Drs. Jones and Batchelder. The patients on whom the above diagnoses were made were present and made a short statement as to their present condition.

The O. P. D. Medical Service represented by Dr. K. M. Barr presented two cases of so-called Indigestion which on careful study proved to be gastric carcinoma. She also presented the history of one case of Diabetes.

President Wheaton stated that the Surgical Service will have charge of the next meeting May 2, 1929.

The President then took occasion to present to the members of the Staff the new Superintendent of the Hospital, Dr. Walter E. Wright, who spoke briefly expressing his desire for co-operation.

Previous to the meeting the Deshell Laboratories Incorporated of Chicago, through their representatives, Messrs. Christiansen and Pine presented a film showing the peristaltic motion of the stomach and intestines under vagus stimulation. The animals used were a dog, rabbit and a cat. The film was clear and interesting to the Staff members who expressed their appreciation through President Wheaton.

Meeting adjourned at 10:30 P. M. There were 23 members present.

STANLEY SPRAGUE, M.D.
Secretary Pro Tem.

NEWS ITEMS

The *Journal* noted with agreeable satisfaction that the American College of Physicians at the last meeting of this organization recently held in Boston, honored Dr. A. M. Burgess, of this city, in electing him to membership.

Dr. Frank Browning Littlefield has recently opened an office at 133 Waterman St.

Dr. Littlefield will do a general practice.

BOOK REVIEW

SYPHILIS—*by Charles C. Dennie, M.D.*, Harper and Brothers Publishers is an excellent treatise on syphilis for the general practitioner. The book may be roughly divided into three parts:

(1) pathology and diagnosis of syphilis in general,

(2) syphilis of the various systems of the body,

(3) treatment.

The book is complete and should be of great aid to the practitioner. Binding and printing are good.

MISCELLANEOUS

STARVATION AS A THERAPY

Fasting as a cure of diseases other than those due to overeating runs back to antiquity. It is frequently bound up with religious pratices and prayer under the assumption that abstinence from food "purifies" the body and renders it less susceptible to the influences of evil and more susceptible to the influences of good. When fasting is united with prayer one cannot know whether the favorable outcome is due to the fasting or to the prayer. In a recent address before the Medical Society of London, Dr. Edmund Spriggs[1] reviews the history of fasting as a therapy in earlier times, the modern indications for fasting in disease, and the dangers involved in the therapy of fasting. The physical, chemical and mental changes involved in prolonged starvation have been subjected to excellent studies both on man and on animals in recent years. Organs lose weight, not uniformly, and some, such as the heart and brain, lose at a much slower rate than organs such as the pancreas, liver and spleen, and the skeletal muscles. The basal metabolic rate and the blood pressure are gradually lowered during a prolonged fast. Complete starvation, particularly in an obese person, leads to a mild degree of acidosis. The changes in the blood during starvation are not great. There is a tendency to a slight increase of the non protein nitrogen and slight but not consistent or persistent decrease in the blood sugar. A healthy, well nourished man may fast for from thirty to forty days without demonstrable permanent injury, and dogs may fast without apparent injury for a much longer time. All this, of course, is under conditions when the individual receives a liberal allowance of water. After the rapid loss of weight during the first few days of fasting, an adult person on complete starvation may lose weight at the rate of about half a pound a day when no excessive physical work is being done. Despite the complete absence of food in the alimentary canal for from thirty to forty or more days, the alimentary canal still harbors at the end the flora common for this organ. Fasting for the purpose of sterilization of the alimentary canal is a failure. Complete starvation is not painful. The essential subjective symptoms are fatigue, and the predominance in consciousness of thought of food

and eating. The sex urge is decreased. Dr. Spriggs refers to the wartime undernutrition experience of central Europe. Good clinical studies of these conditions have been reported. At no time, of course, was there complete starvation in Germany or Austria. There was rather prolonged undernutrition and probably, in some cases, there were qualitative deficiencies in the diet, accompanied by unusual mental stress and anxiety, worry and fear. Under this restricted food intake in central Europe cases of diabetes, gout and obesity were greatly improved or decreased in number, while nervous disorders increased, as did tuberculosis and anemia. Patients with myxedema appeared to do badly. Chronic diarrheas and digestive disorders were increased, but this may have been due to the abnormal character of the available food rather than to the partial starvation.

Dr. Spriggs outlines the results of the clinical experience with starvation in local diseases of the alimentary canal, in epilepsy, in obesity, in diabetes, and in diseases of the circulation. He concludes that complete fasting is beneficial in appendicitis, peritonitis and ulcers, largely on the basis of the rest of the digestive organs afforded by the absence of food. The reasons assigned for the apparent benefits of fasting in alimentary canal disorders do not seem convincing, since it is now known that the digestive glands continue to secrete and the alimentary canal continues to exhibit motility all through a prolonged fast. Short complete fasts of from two to three days are said to be valuable in a number of other diseases, such as pneumonia, severe fevers, acute nephritis, chronic uremia, migraine, hyperthyroidism, local infections, phlebitis, rheumatism, rickets, and the vomiting of pregnancy. A number of physicans have reported diminution in the number and intensity of epileptic attacks in patients with idiopathic epilepsy during fasting. This appears to be due, not to the fasting directly but to the acidosis accompanying the fast. On the resumption of a normal diet the condition of the patient returns to the original state. Dr. Spriggs discusses in greater detail the regimen of fasting in obesity. He recommends not complete abstinence from food but a severe restriction of the calory intake to a level of from 1,000 to 1,300 calories. This restriction should be horizontal rather than vertical, so that the patient obtains some of every ingredient necessary for the body welfare. The calory restriction is usually coupled with a definite increase in physical activity. Dr. Spriggs appears to have had success with this therapy not only with those obese from excessive eating but even in those obese in consequence of apparently hereditary factors ("endogenous" obesity). The pains and discomforts that some of these patients may exhibit after ten days or two weeks on this low calory intake are said to be quickly relieved by a meal. "Serious symptoms seldom arise during the treatment, and those formerly present generally disappear. Specially striking is the loss of breathlessness." This is ascribed to the removal of fatty tissue among and within the muscle fibers of the heart. Anemia, it is reported, does not develop under this regimen. Dr. Spriggs remarks that obesity is often complicated by other disorders, and as a general rule after treatment by starvation the accompanying disease is improved. Two conditions especially can nearly always be treated in this way: circulatory disorders and mild glycosuria. Patients with high blood pressure benefit almost invariably by reduction in weight, if they are overweight, and in the majority of other patients the blood pressure is also reduced. Dr. Spriggs considers that a temporary short fast is still of value in diabetes, and mild diabetes may be controlled by moderate calory restriction without the use of insulin. He points out that children and cachectic and tuberculous individuals should not be deprived of food for more than a comparatively short period.

Except in cases of obesity clearly due to overeating or under exercise, the fasting therapy is obviously not a cure-all but merely an aid to other remedial measures. The complications that may arise in a prolonged fast and the dangers to life and health that may eventuate in a starving person who is sick to begin with are such that fasting as a therapy is not safe except in the hands of competent physicians.

According to Dr. Spriggs, fasting in an otherwise healthy person decreases resistance to infectious diseases. This may be seriously questioned, at least in cases of complete fasting not extending over longer periods than from fifteen to thirty days. As to the ways in which fasting may improve the general body health, there is little reliable information except for those obviously obese from overeating, in which case it may be a matter of less work for the heart, lessened tendency to fatty infiltration of essential tissues, and lessened strain on the pancreas and the liver. Dr. Kunde[2] has

shown that in complete fasts of fifteen days or more in man and from thirty to fifty days in dogs there is an increase in the basal metabolic rate extending over many months after the fast has been broken. In dogs there is also an increased secretion of gastric juice and greater economy in the utilization of nutrients by the tissues. If these results should be confirmed and extended, some of the apparent benefits from fasting may be rendered understandable on these lines. Further, since in fasting the glandular tissues, among them the liver, pancreas, gastro-intestinal mucosa, thyroids and gonads, suffer great loss of weight, it is not improbable that in realimentation these organs respond with increased cell division and therefore may be said to be partly rejuvenated. This matter requires further investigation before it can be put forth as a basis for fasting therapy.

It has been suggested that nature itself points toward a fasting therapy in those diseases that are accompanied by decreased hunger and appetite. But the success of the newer regimen of "feeding fevers" questions the inference. The ills of overeating and the dangers of partial starvation are relative, and excessive claims are advanced in both directions.

Among some people in this country, fasting as a road to health has become an unscientific if not an injurious fad. On the other hand some physicians go to the other extreme in holding that short periods of complete abstainence from food, and longer periods of severe restriction in calory intake, are always dangerous proceedings. Some of Dr. Sprigg's conclusions are still tentative. More controlled observations both in the clinic and in the laboratory are needed before the final word can be said on the value and the limitations of fasting. But if there is real albeit limited merit in the fasting therapy, its aroma of cultism and occultism is no deterrent.—*Jour. A. M. A.*, April 6, 1929.

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[1]Spriggs, Edmund: Lancet 1:485 (March 9,) 1929.

[2]Kunde, M. M.: J. Metab. Research 3:399 (March) 1923; Am. J. Physiol. 68:389 (April) 1924.

CHRONIC ULCER OF THE LEG

Three hundred cases of chronic leg ulcer have been treated by Joseph W. Sooy, Baltimore (*Journal A. M.*, April 6, 1929), with a modified Unna's paste. Complete healing has occurred in 85 per cent and 15 per cent show satisfactory progress. The formula of the paste that Sooy is using is glycedin, 1,900 Gm., 1,425 cc.; gelatin, 625 Gm.; water, 1,900 cc.; zinc oxide, 250 Gm.; phenol, 1.50 per cent of total volume, making a total of 4,675 Gm. or 10 pounds, which is sufficient for seven dressings. After its preparation it is placed in a double boiler and heated to just above body temperature, at which point it becomes fluid and has a viscosity not unlike that of ordinary paint. In this form it is applied with a paint brush directly to the skin of the leg from the base of the toes upward to just below the knee. It is allowed to come into intimate contact with the ulcer, no preliminary dressing being necessary. A simple spiral bandage without crosses or reverses is applied over the paste, and then more paste is applied over the bandage. This is repeated until there is a total of three layers of bandages and four layers of paste. The final preparation, when cool, becomes rubbery hard and makes a pressure bandage which, because of its slight porosity, will allow escape of the discharge from the ulcer. A maximum of one hour a week is required for the application of the bandage. The length of time that a single bandage may be left in place depends on the amount of edema and the amount of exudate from the granulating surface. A light gauze bandage may be placed around the more permanent paste bandage and the patient instructed to change the former when necessary. In this manner the exudate which escapes through the pores of the paste will be satisfactorily cared for and the dressing will always present a clean and dry external surface. A paste bandage which has been cared for in this manner has been left in place for as long as twelve weeks, and when at the end of such a period the bandage has been finally removed, the ulcer has been found in excellent condition, sometimes completely healed. The bandage is suitable for use in any climate. When the temperature is very high it may be dehydrated and fixed with a solution of 85 per cent alcohol, a diluted "solution of formaldehyde U. S. P." (6 per cent), and 9 per cent ether. This solution is applied by simply sponging the bandage. This form of treatment has also been used in cases of varicose veins with considerable relief on the part of the patient and marked lessening of the edema of the ankles and lower leg. Sooy has also used it in two cases of unhealed secondary burns with very satisfactory results.



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A NEW danger to the health of motion picture stars has just been revealed. The motion picture camera, in photographing a star, adds from 5 to 20 pounds to the appearance of her figure, so that many of the screen celebrities, because of the fad for slimness, have felt called upon to undergo rigorous programs of dieting.

Photoplay Magazine recently announced that many of the stars have suffered collapse because of this dangerous practice. One famous star died of tuberculosis aggravated by weight reduction. Another ruined her career and was made an invalid by starvation. Still another resorted to quick-reducing medicines and is today virtually an invalid. Another star, as mentioned here, collapsed on a set from trying to lose 10 pounds.

One of the alarming dieting extremes indulged in by the stars, according to *Photoplay,* is eating no food at all for breakfast, and seriously limiting the quantities of nourishing foods for both luncheon and dinner. It is small wonder that such a wrong standard of diet should result in disaster. No person can be healthy without eating enough nourishing food, daily and regularly.

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Journal of Laboratory and Clinical Medicine*, **11:116.

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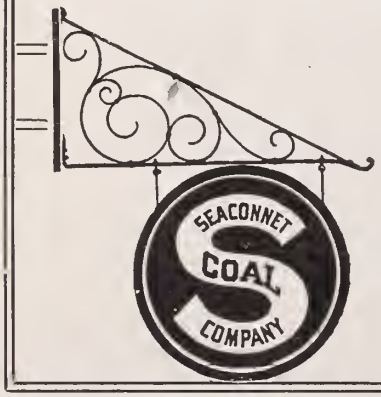
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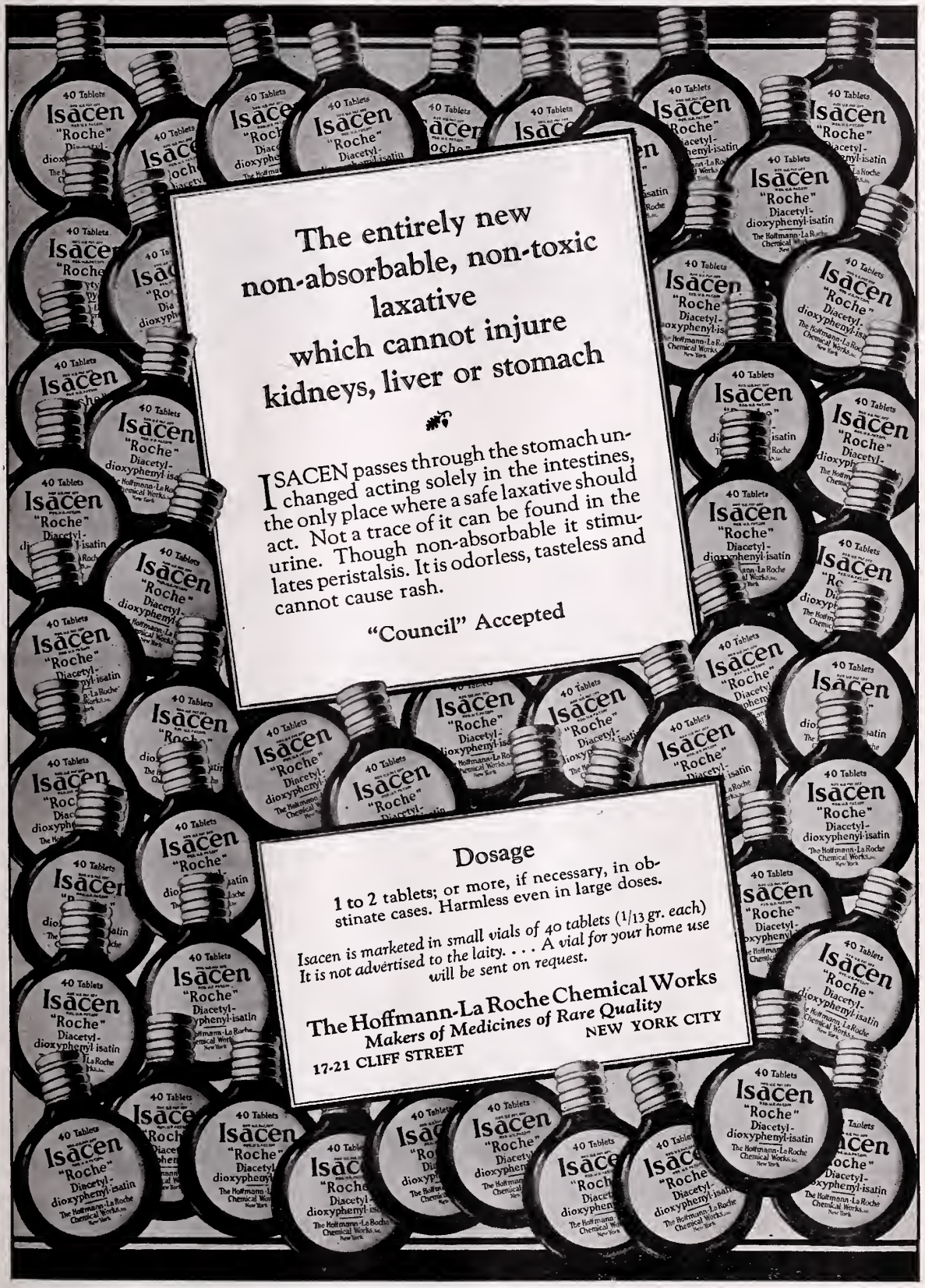
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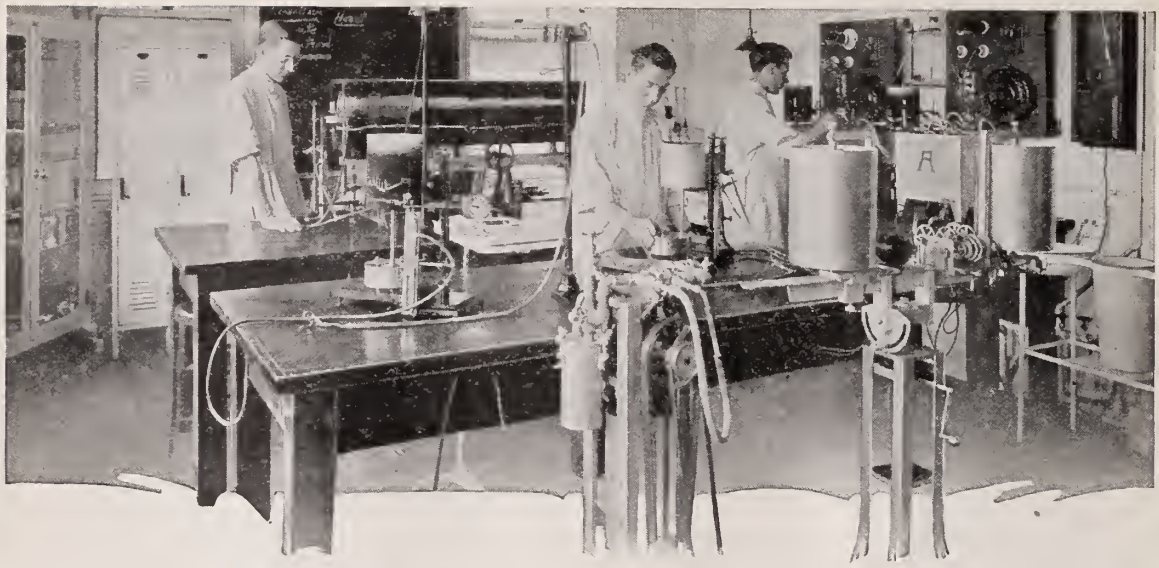
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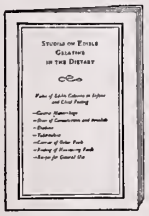
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ORIGINAL ARTICLES

HEART BLOCK*

By Thomas Conrad Wolff, M.D.

Dispensary Physician and Physician to the Diagnostic Clinic, The Johns Hopkins Hospital, Baltimore, Maryland.

The mechanisms associated with the heart beat have for years been sources of never ending interest to the Physiologist. The causes of interference with these mechanisms have formed fascinating subjects for many Pathologists. The inter-relationship between the two is the field of the Laboratory Cardiologist, while the unfortunate humans exhibiting abnormal cardiac mechanisms turn for assistance to the clinical Cardiologist and even more frequently to the harried general practitioner. It is well therefore that this man of universal Medicine should occasionally pause to review his knowledge, and perhaps add to his knowledge of the abnormal cardiac behavior which he meets so constantly. Some of these abnormal behaviors grouped under the heading of Heart Block will be briefly scanned this evening.

Perhaps for the sake of clearness, some basic facts had better be recalled. The human heart is evolved from an embryonic organ containing a sinus venosus. This is later submerged in the musculature forming the posterior part of the right auricle. Here, in the *sulcus terminalis* is a club-shaped mass surrounded by a coronary vascular circle. This mass, the Sino-Auricular Node sends a few strands up the superior vena cava, its lower end terminating half way between this vessel and the Coronary Sinus. The remainder of the original sinus tissue is condensed into the auricular part of the Auriculo-Ventricular Node which lies in the region of the Coronary Sinus. The ventricular portion of this node is derived from the tissue of the auricular canal.

From the Auriculo-Ventricular Node a round bundle passes across the Auriculo-Ventricular Septum and courses downwards and forwards until reaching the interventricular septum it in turn divides into right and left branches. These branches in turn spread an extensive aborization throughout their respective ventricles on the inner surface of the ventricular walls.

The Sino-Auricular Node becomes active or electrically negative before any other region, under normal conditions. For this reason it is called the Pacemaker. If it be depressed or destroyed, the irritability of the Auriculo-Ventricular Node supervenes and it in turn becomes pacemaker, generally at the Coronary portion. If this in turn becomes interfered with the progressive Pacemakers thereafter are, in order of precedence, the ventricular portion the His bundle, or the Branches.

It is doubtful if any center below the Branches can effectually dominate the rhythm of the heart. Their importance lies in that they serve to disturb some dominating rhythm as in the production of extrasystoles.

No differentiated conduction paths have been shown to exist in the auricle. Impulses from the Sino-Auricular Node spread radially over ordinary auricular tissue at a speed rate of 600 to 1200 mm. per second according to the determinations of Lewis Meakins and White. Bachmann has shown that impulses probably pass to the left auricle by the inter-auricular band. Impulses reach the Auriculo-Ventricular Node via a simple auricular tissue and of course the bundle and its branches continue the conduction to the Ventricles.

Wiggers found the transmission rate to be 200 mm. per second in the Auriculo-Ventricular Node and 3000 to 5000 mm. per second in the bundle and its branches. He states that ventricular muscle conduction is at a rate of 400 mm. per second. The evident delay at the Auriculo-Ventricular Node insures stimulation in the furthest reaches of the Auricle, the Auricular Appendices, before the ventricles become excited. The rate of transmission through the bundle, insures the arrival of the impulses at the terminal aborizations at approximately the same time.

Practically this means that the stimulation from the Sino-Auricular Node to the Auriculo-Ventricular Node occupies about 0.10 second, that there is

*—Delivered before the Providence Medical Association, April 1, 1929.

a delay of 0.05 second in the Auriculo-Ventricular Node and that the time taken from that point to the terminal aborization is 0.01 second.

Cullis and Dixon applied Cocaine to the conducting system of dogs. The nerve fibers were paralyzed but conduction was unhindered. We may therefore deduce from this evidence that transmission is myogenic rather than neurogenic in nature.

Electrocardiographically transmission from the Sino-Auricular Node to the end of the Bundle ramifications is measured by the P-R interval. The P wave represents spread of negativity in the auricles, the beginning of the R stroke indicates the beginning of ventricular activity. The gap between the P wave and the R represents a delay of transmission through the Auriculo-Ventricular Node, the bundle and its branches.

The nerve supply of the heart is derived from the medulla through the vagus trunks and from the upper segments of the thoracic cord through the sympathetic chain. The supply is essentially homolateral though there is some overlapping of the right fibers on the anterior aspect of the ventricle. When outside of the Auriculo-Ventricular Node and Bundle it is impossible to decide whether the fibers belong to the Vagus or Sympathetic Systems.

Stimulation of the right vagus nerve slows the heart without any alteration in conduction time. Stimulation of the left vagus causes a marked ventricular slowing without altering the auricular rate. This means that rhythm production in the Sino-Auricular Node is under right vagus control whereas the left vagus is more concerned with increasing auriculo-ventricular conduction time.

Strong stimulation of the vagus, principally the left, but at times also the right, and certainly in the event of simultaneous stimulation of both vagi, may cause the seat of impulse formation to move progressively to regions of lower automaticity. A complete block of impulses across the Auriculo-Ventricular tissue may occur. When the ventricle escapes from such inhibition and establishes a rhythm of its own, the impulses may originate in the main bundle or one of its branches, in which case one ventricular beat precedes the other.

The right accelerator nerve chiefly affects the S-A Node while the left chiefly affects the A-V Node and therefore stimulation of the right stellate ganglion increases auricular and ventricular rate without altering conduction time whereas stimulation of the left markedly shortens the P-R interval as well as increases the rate.

Nature of Heart Block

This is two fold, firstly an Anatomical Disconuity as when the tract of conducting tissue is cut across by disease or experimental incision. Secondly, Physiologically as when through disease processes of Chemical poisons toxic absorption results in depressed excitability of the conducting tissue.

Clinically block can occur at any level and expresses itself in all grades from Sino-Auricular Standstill to Arborization Block.

If we agree with Englemann that conductivity, excitability and contractility are three separate and distinct functions, then we can explain a missed response of the ventricle in one of three ways. However the separateness of these functions has not received any general assent. Lewis finds that evidence accumulates steadily against this theory.

Latency is the hesitancy of muscle to respond to stimulation over a measurable interval. Erlanger, Straub and Mobitz consider latency as an important part of Heart Block. Lewis however seems convinced that there are as yet entirely insufficient data from which to argue either one way or the other. He considers the phenomena involved thus far too complex to be understood properly.

Altered Transmission Rate Between Points is another explanation of increasing P-R intervals. Transmission through auricular muscle widens—

1. When the heart rate is sufficiently raised.
2. When it is under the influence of Strophanthin or Quinidine.
3. Experimentally when the heart is perfused with a nutrient fluid, more acid than normal, or when the junctional tissues are cooled.

This of course inevitably brings into discussion what is known as The Partial Refractory Period. When the mammalian auricle is driven at excessive speed, the ventricle fails to follow suit and breaks eventually into an unstable 2:1 response. The ventricle is thus guarded from excessive impulses by tissue having a relatively long refractory period. However before the ventricle fails fully to respond there is a stage of progressive widening

of transmission intervals due to the development of a state of partial refractoriness. This means that the response to stimulation is not simultaneous and unanimous in the neighboring fibers and the wave wandering through sinuous channels is late in reaching its destination. When the rate of response has been increased beyond a certain point the transmission intervals, previously of unchanged length, begin to widen out progressively. This theory will account for—

1. The phenomena of widening intervals.
2. The curious arrangment of intervals around a dropped beat.
3. The actual dropped beat itself and the close association between Block and Alteration.
4. Auricular Flutter and its mechanism.

Partial Refractoriness is either partly or wholly responsible in the block produced by toxins directly on the muscle such as the Digitalis bodies, Quinidine, Veratrin, etc.

Decrement is the continuous decline in strength of an impulse as it travels through defective tissue. Drury and Andrus have offered some preliminary evidence that this phenomenon is one means of explaining certain features of block.

Carter and Dieuaide have suggested that in the block of Hay's type in which ventricular beats are dropped without preliminary lengthening of the P-R intervals, the defect is in the bundle rather than in the A-V Node.

It is well also to recall here that when block is already present, Vagus action increases it.

Etiology

The causes may be grouped under the headings Therapeutic, Toxic, Mechanical.

Therapeutic

Commonly the Digitalis bodies, Quinidine, Aconite, and in susceptible persons Morphine and the Salicylates. Perhaps Aspirin more frequently than others.

Toxic and Mechanical

Diphtheria produces an especially acute and fulminating type of block. It may affect the vagus centrally or peripherally in the S-A or A-V nodes. By its well known degenerative myocardial action it may also exert an effect whose nature is mechanical as well as toxic.

Rheumatic Fever even in mild cases may exert a toxic effect on nodal tissue and a mechanical effect through its inflammatory reactions—edema, cellular infiltrations, Aschoff bodies, etc.

Syphilis in the early stages by toxic action may produce toxic block similar to Diphtheria and Rheumatic Fever. Later by gunmata and fibrous tissue proliferation mechanical block frequently occurs.

The Bacteriemias and Septicemias, including Staphylococcal, Streptococcal, Gonococcal, Pneumococcal, Influenzal and Typhoid have also shown varying grades of block toxic and mechanical.

The exanthemata are at times offenders.

Anterior Poliomyelitis and Anaphylactic Shock both show the progressive type of Block known as Asphyxial block, so called from its identity with Lewis' Cat Asphyxiation experiments.

Mechanical

Occlusion of the Arterial supply to the Bundle and its Branches Aneurysmal dilatations of the Coronary vessels pressing on the conduction system, Tumors, any fibrosing, calcifying, sclerosing, infiltrating or inflammatory reaction directly interfering with the transmission of stimuli across the normal pathways of conduction.

A possible Classification of the Grades and Types of Heart Block might be as follows:

1. Sino-Auricular Standstill. 2. Auriculo-Ventricular Block. *Partial*—1st Degree, involving only lengthening of the P-R interval; 2nd Degree, involving progressive widening of the P-R interval with dropped beats. This occurs mostly in cycles. 3rd Degree—Simple ratios, 2:1, 3:1, 4:1, and even greater. *Complete.* Showing auricles and ventricles beating on their own rhythms independently of one another. Complete Block includes *Congenital Block.* A-V Block partial is often Digitalis effect. 3. Bundle Branch Block. 4. Arborization Block. 5. Auricular Flutter.

Sino-Auricular Standstill

Resnik in 1923 contended that Sino-Auricular Block was a misnomer. His electrocardiograph records show complete absence of demonstrable Sinus activity in the long pauses. He concluded that it was merely one of the forms of Sinus Arrythmia.

Sino-Auricular Standstill shows itself as an occasional dropped beat, or at times a group of dropped beats with auricular as well as ventricular silence. These droppings may regularly recur. Again it may show itself as a sudden precise halving of the normal rate, in which case exercise, excitement or emotion may restore suddenly the original rate and thereafter with continuation of the exercise, etc., will steadily increase it. The stimulus removed, the rate gradually slows to 70 or 60 and then precisely halves again. There may be profound and continued slow action of the entire heart—and finally there may be a complete Sino-Auricular Standstill with onset of Nodal rhythm.

Without doubt Sino-Auricular Standstill is a vagus effect as it is always abolishable with Atropine.

The toxins of Rheumatic Fever, Diphtheria, the Septicemias and Bacteriemias have produced it rather strikingly.

Cockayne and Hamburger have reported cases of Sino-Auricular standstill apparently produced by the toxin of Influenza. Laslett reported another striking case in which the heart went into total Standstill for from 4 to 8 seconds.

Neuberger reported a case of standstill occurring repeatedly in a man during the act of defecation. Autopsy showed an Aneurysm upon the basilar artery producing pressure upon the medullary centers during sudden rises in blood pressure from any cause.

Wiggers thinks the condition is not nearly so rare as has been reported and he questions its pathological significance pointing to the large number of undoubtedly healthy persons who have it.

One is inclined to look upon Sino-Auricular Standstill as an interesting fairly frequent but clinically rather unimportant affair, having no essential bearing upon an individual's future, being significant of vagotonia and therapeutically very much of a nonentity.

Auriculo-Ventricular Block

In contrast to Sino-Auricular Standstill Auriculo-Ventricular Block is of decided interest to everybody concerned and of course has a most important reference to the future of its victim.

The incidence of first degree block is common, perhaps more as a Digitalis effect than as a toxic effect. This may synchronize with the subjective symptoms of nausea and vomiting. *Per se* first degree block has no subjective symptoms and beyond the slowing of the pulse and a reduplication of the first heart sound there are usually no signs. It is well however to recall that in Mitral Stenosis cases which have usually shown the characteristic presystolic rumble and thrill there is a change in the presence of first degree block to a rumble and thrill of mid-diastolic or early diastolic timing.

Of the Infectious diseases Diphtheria and Rheumatic Fever are probably the most frequent offenders but other infectious diseases offend often enough to be noticed—and I must mention here one interesting case I saw in the wards of the Johns Hopkins Hospital. He was a white man, seriously ill with Typhoid whose P-R interval steadily climbed to 0.36. He did not increase his block further and after many weeks he eventually recovered a normal conduction time.

Myocardial Degenerations have their share in the production of first degree block as for example the case of an elderly negro attending the J. H. H. Dispensary. This man has shown a P-R interval varying for over a year between 0.22 and 0.26 without advance or retrogression in degree of block. Cary Coombs, in his Text Book "Rheumatic Heart Disease" refers to a man with Chronic Cardiac Rheumatism who had a partial block for years without changing in character or degree. In such cases he suggests that there is probably a permanent lesion involving the Artery to the Bundle. He states that Block on a Rheumatic basis while frequent enough is seldom more than trivial in degree.

Second Degree Block is merely a stage in advance of first degree block in that the P-R intervals progressively increase until one auricular contraction fails to find a ventricular response. The P-R interval immediately thereafter shortens and then there is a progressive widening until the dropped beat again occurs.

Etiologically identical with first degree block it differs objectively in that there are periods of occasionally recurring ventricular silences, the pause at times being exactly equal to two rhythmic beats but generally falling somewhat short of this. The radial pulse before the dropped beat as well as after it shows a tendency to lengthening intervals.

Lewis found that with exercise and the inhalation of amyl nitrite the pulse quickens and be-

comes regular. With rest the irregularity re-appears and the first sign of its return is the occurrence of an unusually long ventricular pause.

As the number of the dropped beats increases in frequency there is a tendency to regularity in the grouping of beats and intermissions. Even at this stage, exercise and Amyl Nitrite will abolish the block, but of course only temporarily.

Second degree block has another feature, called at times the Block of Hay's type in which there is a sudden dropping of ventricular responses without the feature of increasingly progressing P-R intervals.

Third Degree Block immediately follows on late Second Degree Block. It is characterized objectively by ratios such as 2:1, 3:1, 4:1 and so on. It is to be suspected in any patient in whom the heart beats regularly, and in whom the rate lies between 40 and 50 per minute.

Lewis again discussing Mitral Stenosis points to the two presystolic thrills and rumbles that accompany one ventricular beat in the 2:1 ratio and of course the higher the ratio of block the greater number of thrills and rumbles to the ventricular beat.

In block as high as 2:1 exercise and Amyl Nitrite may serve temporarily to remove the block. The former while doubtless experimentally possible is surely not to be tried indiscriminately. There is of course no therapeutic gain to be achieved from it to say the least.

The Zone of Danger. The Zone of Ventricular Standstill Lies in This Neighborhood. Third degree Block is notoriously unstable and advances readily to the next order of procedure which is complete block with Ventricular Standstill. The Bundle may then take on a Pacemaker, and if it does within reasonable time, well and good. The obvious danger that standstill may remain standstill is the matter of gravest concern both to physician and patient. Even when the bundle does develop a Pacemaker there is generally a good deal of struggle for control at least temporarily between the new center and the centers of higher rhythmicity, involving of course many attacks of standstill due to the refractory A-V Node.

The "Zone of Danger" has the Stokes Adams Syndrome as its characteristic manifestation and this well known syndrome varies in intensity of action directly in proportion to the extent and duration of Cerebral Anemia. I would like here to describe some of my own cases illustrating this in several ways.

Case 1: Man in early fifties, laborer, arterio-sclerotic seen in No. 5 Dispensary J. H. H. Complaints: Attacks vertigo, dimness of vision, nausea. During examination pulse dropped sharply from 66 to 33 for perhaps as long as 20 seconds and then resumed its usual rate.

During the attack he complained of nausea, and dizziness and he firmly grasped the chair on which he was sitting saying he could hardly see and feared he might fall. His pupils were measurably dilated at this time. His ordinary pallor became intensified without a trace of cyanosis, his breathing increased in rate and depth.

Objectively he showed in between attacks the ordinary signs of myocardial enlargement with some edema in the extremities, and some dyspnoea on ordinary exertion. His blood pressure in both phases was within normal limits.

He remained a while in Hospital, reverted to normal conduction time and went back to his home outside the State. Nothing has recently been heard of him.

Case 2: New England housekeeper, 76 years, a diabetic of some years standing and an advanced Arterio-sclerotic.

Complaint: Several abrupt and heavy falls with complete loss of consciousness. Attacks coming on with devastating suddenness.

When I saw her she was lying in bed. She extended to greet me a trembling hand. Her grip in both hands, usually firm, was feeble. Her speech usually crisp and decisive was halting. She said she was too weak to move about in bed without assistance and found it most difficult to move either arms or legs.

When I started to examine her, her pulse rate was 80. It suddenly dropped to 20. At the time she was in the midst of a sentence. She stopped the sentence suddenly. Her face became markedly blanched, her pupils widely dilated and she started a stertorous respiration. There was some slight twitching of the facial muscles. I should judge that this lasted perhaps twenty seconds when the pulse suddenly reverted to 80. Consciousness immediately returned and she finished her sentence. She seemed entirely unaware of her attack of

Stokes-Adams. I remained in the house for an hour thereafter during which time she had five such attacks.

She is now up and about with a pulse rate of 40. She has had no attacks for nine months, but for six weeks she went through many Stokes-Adams fits and finally developed a complete A-V dissociation. She is attending to very much restricted duties. She becomes dyspnoeic and has some precordial pain and edema if she overdoes. Living quietly she has no subjective symptoms.

Case 3: Elderly Sea Captain, advanced arteriosclerotic with myocardial degeneration, dyspnoea, and tachycardia on exertion, some pitting oedema in the extremities, heart quite enlarged, occasional gallop rhythm, B. P. within normal limits in both phases. One day without warning he fell heavily to the floor in a Stokes-Adams fit. By the time I reached him 15 minutes had elapsed. I found him with a feeble alternating pulse about 90. I was in the act of preparing a hypo of Adrenalin for him when he announced that he was dying. His heart showed complete ventricular standstill for about 15 to 20 seconds. He slumped back in his easy chair, his pallor was marked, his pupils dilated, his breath was stertorous, and twitchings were beginning in his facial muscles when the ventricle started up again at its usual rate.

Congenital Block is really part of Auriculo-Ventricular Block. It is usually associated with defective development of the Auriculo-Ventricular Bundle. As a result its victims subsist on an idioventricular rhythm.

Carter and Howland reported 12 such cases. Some of them were recognized as early as the twelfth day while others remained undetected till the twentieth year.

Aylward in the British Medical Journal Vol. 1., 1928, reports two cases of congenital block in one family. Both children show no other defects and their family history is excellent.

All these youngsters were apparently unhampered by this damage, running around actively with pulse rates in the neighborhood of forty.

This of course goes to show that the thing of the greatest importance is the health of the myocardium and only to a lesser extent the integrity of the conduction pathways.

Therapeutic Block should also be considered under the heading of A-V Block. Though, as previously mentioned, therapeutic block has occurred during the administration of Aconite, Veratrin, the Salicylates, etc., it is an accidental and often alarming affair. On the other hand therapeutic block of the A-V node is as all of you know, the most useful and valuable method of treatment when a fibrillating auricle is showering stimuli in excess upon the A-V Node. This of course is an affair of Digitalis and its family. When carried beyond therapeutic necessities it progresses beyond partial block into even greater grades. There is however so much involved in this subject that it is of course out of place in a paper such as this. Those interested can do no better than read the masterly work of Canby Robinson on Digitalis.

Last June in the American Heart Journal John T. King published a paper on the clinical diagnosis of Bundle Branch Block. His standards for its recognition were:

1. Visible Bifid Thrust.
2. Palpable Bifid Thrust.
3. Feeble heart sounds with a sound and an asynchronous murmur accompanying the two elements of the systolic thrust.

It was my good fortune to see two of Dr. King's nine cases, one in the ward and one in the Dispensary. Since the publication of his paper I have been able to recognize by these standards two other cases in our Dispensary. I have also reviewed and similarly recognized by these signs an old private patient whose diagnosis previously rested on EKG findings solely.

Although the bifid thrust presents little difficulty in recognition the laying across the chest of a piece of paper or a cloth materially facilitates this recognition.

In one case I was able to recognize Waldorp's sign — a reduplication of both first and second sounds.

All the cases I saw have been on a basis of Senile Myocardial degeneration as were eight out of nine in King's series. One other showed a history of Rheumatic Fever and one gave a history of Tonsillitis but the bearing of these diseases on the B. B. B. was most doubtful.

Rohmer in a series of studies of Diphtheria hearts ante mortem reported variations in the ventricular complexes suggesting conduction disturbances in the bundle branches.

Electrocardiographically the standards are:

1. Widening of the QRS complex beyond 0.10 seconds.

2. Notching of the QRS complex.

3. T wave in a direction opposite the main ventricular deflexion.

4. Dextrogram or Levogram predominant.

Carter's 20 cases showed 19 right bundle blocks, and one left.

King's 9 cases were all right blocks.

The 5 cases I saw were all right blocks.

It is assumed that the proportion is somewhere about ten right blocks to one left.

Most cases of B. B. B. are associated with a blood pressure either within normal limits or somewhat below. Certainly the ventricle cannot have as great a power while one is lagging as would be the case with both working synchronously. However some cases with hypertension have been noticed and the difficulty arises in distinguishing the sounds of B. B. B. from presystolic gallop rhythm. The bifid visible and palpable thrust will usually be sufficiently distinct.

I have incidentally recently seen a record where B. B. B. occurred paroxysmally.

Auricular Flutter

In this condition we find one continuous wave circulating around the openings of the superior and inferior vena cava. This differs from the ordinary contraction wave in that it does not have any radiation. It reminds one of an animal chasing its tail. It passes back over the same pathway again and again. It produces a very fast and feeble auricular beat varying from 150 to 360 per minute. The time elapsed in the completion of one circuit varies with its length and also with the rate of conduction. There is never any real diastolic auricular pause and thus the auricle gets no rest. There is of course at each circuit an impulse sent to the A-V node but owing to the phenomenon of Partial Refractoriness which we previously considered many impulses do not get through. Ordinarily Auricular Flutter is a 2:1 block though other ratios are seen. Regularity or irregularity in ventricular response depends upon the sensitivity of the A-V node.

Although flutter may occur in fleeting attacks it is more customarily a matter of months or years. Rheumatic Fever, Syphilis, and Influenza have been known to be etiological factors but in the vast majority of cases it may be attributed to Myocardial Degeneration and it is seen usually in persons of middle or advanced years.

There does not seem to be any characteristic morbid anatomy.

Flutter patients subjectively describe the onset of this rhythm as accompanied by palpitation and perhaps even by fainting. They may speak of several attacks antedating the final one of which they cannot rid themselves. During periods of excitement or emotion the ventricle may respond to every auricular impulse. The patient is then temporarily conscious of the frequency of the beat. With such speedy ventricular action however consciousness is rarely retained. In this eventuality vagus pressure is often of material assistance in slowing things up.

Confusion between Paroxysmal Tachycardia and Flutter may arise but if we remember that commonly Paroxysmal Tachycardias show ventricular rates of 180 to 220 per minute and that auricular rates surpassing 360 are unknown the matter is not so difficult and it is at all events of rather slight practical importance. In the matter of duration Paroxysmal Tachycardias do not last beyond 14 days while flutters last for the most part over months and years.

Flutter at times shows a feature characterized by irregular responses of the Ventricle to Auricular Stimulation. At this time confusion with Auricular Fibrillation is commonly made. During such times, however, exercise of even slight grade will accentuate ventricular action and induce perfect regularity of the pulse in a 2:1 Block.

Treatment

Sino-Auricular Standstill

This is seldom regarded as a therapeutic affair of much interest but should the symptoms arising from it be troublesome it can be easily controlled by Atropine in average dosage.

Auriculo-Ventricular Block

Treatment for this condition is divided by Hirschfelder into three phases:

1. To bring about retrogression of the lesion in the bundle.

2. To remove as many factors as possible which tend to increase the block.

3. To increase the irritability and rhythmicity of Ventricular muscle so as to shorten the periods of stoppage and to increase the rate of the ventricles.

N. B. I think he might have added a fourth phase: To increase the likelihood of the rapid development of new areas of sensitivity or negativity for the purpose of Pacemaking in emergencies.

The first phase of the Hirschfelder system is directed towards luetic lesions in the bundle. In many instances, particularly in early lues this results favorably. In later lues increase in block has at times followed mixed anti-luetic treatment, perhaps due to the depressing effect of K salts on the A-V node. This however should not cause anyone to hesitate about the application of anti-luetic treatment in all cases where it is indicated.

Where definite sclerosis has occurred little can be accomplished in a therapeutic way.

The remaining phases of the Hirschfelder system are directed to increasing the irritability of the A-V node and the potentially pacemaking tissues. Simple rest is at times surprisingly effective but generally more active. Treatment is called for and this is generally of a drug nature. Among the useful drugs having a bearing on A-V Block are: Atropine, Adrenalin, Nitroglycerin and the Nitrites, Thyroid Extract, Barium Chloride.

Atropine

Where block is "Vagus Effect" it is the drug par excellence. Even where the block is not vagal it may be possible by Atropine to prevent any subsequent vagus action which can always enhance a block regardless of its nature.

Adrenalin

This is the drug of emergency. Injected directly into the Myocardium it frequently abolishes ventricular standstill. Partial block may be likewise abolished by subcutaneous injections of Adrenalin. The effect is generally good for a few hours. There is no evidence pointing to any permanently beneficial effect either in the use of Adrenalin or its relative Ephedrin.

A subcutaneous injection of Adrenalin during complete standstill is of course unlikely to accomplish anything because ventricular standstill is synonymous with circulatory standstill.

Nitroglycerin and the Nitrites

These drugs, by producing vascular dilatation may stimulate an automatic increase in pulse rate to maintain the circulation. Amyl Nitrite inhaled works rather rapidly, but Nitroglycerin takes from 30 minutes to 3 hours to get in its action and it seems unable to influence the recurrence of attacks.

Thyroid Extract

E. H. Drake of Portland, Maine, after using 480 mgms. Barium Chloride without effect in Stokes-Adams attacks supplemented his treatment with Thyroid Extract beginning in doses of 3 grains daily. After 2 weeks he stepped it up to 10 grains daily for 5 days until nausea, vomiting and hot flashes began. He then stopped treatments. His patient has had no attacks for well over a year.

Barium Chloride

Rothberger and Winterberg showed that Barium and also Calcium increase ventricular irritability.

Von Egmond showed the same effect after traumatic experimental block with complete dissociation.

Cohn and Levine first used it for recurring attacks of ventricular standstill.

Herman and Ashman report favorable results in both transient complete block and also in block of any type showing syncopal attacks. They are convinced that Barium Chloride should be administered constantly in doses as high as 50 mgms. every four hours. They impress patients with the idea that life depends upon the presence of a constant minimum concentration of the drug in the heart muscle in order to keep irritable the ventricular pacemaker, in the case of total dissociation and the A-V node where the block is partial and the subject to recurrences of A-V nodal refractoriness, with ventricular standstill.

Strauss and Meyer concur entirely with this.

It must not be forgotten however that treatment in A-V block must be directed towards the damaged myocardium which frequently exhibits signs of greater or lesser failure. Rest and Digitalization are just as important here as elsewhere despite the trepidation of many clinicians. The words of Lewis here are very much to the point: "The increase of block should not deter Digitalis administration for it is not in itself detrimental

and where indicated should be given without restraint."

In Arborization Block as previously mentioned treatment is directed solely to the damaged myocardium.

Many clinicians have at times been impressed with the favorable action of Quinidine in average dosage on Bundle Branch Block.

The treatment of Auricular Flutter is preferably Digitalization and Digitalis is given until there is a definitely slowing action in the ventricles. It should thereafter be still further pushed until the Flutter is converted into Fibrillation. The drug is then withdrawn, whereupon normal sinus rhythm gradually supervenes. It is possible for flutter to return thereafter but when it does return there is usually a lapse of a rather long time.

Prognosis

Every case of heart block demands close observation over considerable time. During a period when fits are noted, if the feebleness of the patient and the frequency of the fits do not in themselves enforce rest in bed or at least confinement to the home it is important to remember with what catastrophic suddenness fits come on. Three seconds of standstill are sufficient for unconsciousness. It takes considerably more than three seconds to cross a street and with motor traffic at its present day speed the fate of a pedestrian in a Stokes-Adams attack may easily be one of violent demise.

It follows that if such a patient cannot be induced to stay at home in between attacks he should at least always be accompanied.

Many such persons are found dead in their beds, or elsewhere.

Most persons die within three years of their first Stokes-Adams attack.

In a few cases the first attack is the last.

Frequent recurrence of these attacks signifies gross myocardial damage in the majority of cases.

Heart block mild or severe is usually an evidence of myocardial damage generally well diffused throughout the heart.

In the cases where there is an occlusion of the artery to the bundle which is an end artery it is possible that this accident may occur unassociated with any generalized myocardial involvement and it is probable that the large number of those who carry complete dissociation for decades of years and yet seem to thrive have had a simple arterial occlusion as an etiological factor.

Where heart block is definitely on a luetic basis the prognosis is materially brighter than in those whose basis is degeneration or sclerosis. Specific treatment often permanently restores normal conduction.

A very large number of hearts which show delayed conduction on a basis of Influenzal, Pneumoccal or Typhoid toxemia entirely recover.

When defective conduction is on a Diphtheritic or Rheumatic basis there is a greater likelihood of permanence.

Block on any toxemic basis whatever is always to be regarded as an adverse element in the prognosis, when all elements are being summed up. It may be definitely regarded as an index of subnormal myocardial dependability. The majority of patients with fits do not die from fits.

I think we may sum up by saying that when we visualize a patient with block we must visualize a person who possesses a narrow margin of myocardial reserve. Standstill may kill him. Myocardial failure is more likely to.

It will probably be asked if the use of the electrocardiograph is entirely necessary in treating patients with heart block. The answer of course is "No." Many are being treated comfortably and efficiently without the aid of electrocardiography. This being at once granted it is nevertheless true that many cases of early delayed conduction have been missed, which later showed progressive increase. I have seen physicians and one or two otherwise good students who in the presence of a bradycardia had not even considered block. Careful observations and treatment might have averted some catastrophes. One may misinterpret signs, one may on bad days fail to appreciate the presence of these signs, one may on rush days fail to even look for them. In questions of doubtful conduction the electrocardiograph is our most accurate and dependable diagnostic aid and I think that in the not too distant future the portable EK machine will be probably considered part of the equipment of the physician who practices internal medicine and certainly of the one whose preference is the treatment of cardiovascular disease.

HYDRONEPHROSIS DUE TO AN ANOMALOUS BLOOD VESSEL

Report of a Case

S. G. Lenzner, M.D.*
Providence, R. I.

Obstructive hydro-ureteral angularity, according to Hinman[1], can either be an acquired or congenital condition depending upon whether the primary obstruction is in the lower or upper portions of the ureter. In this report we are not concerned with the common types of hydro-ureter or hydronephrosis due to obstruction of the lower ureter. Hydronephrosis, however, due to a congenital cause, such as obstruction in the upper ureter, or at the uretero-pelvic junction, the common cause of which is an aberrant blood vessel, merits reporting.

Aberrant renal vessels are said to occur much more frequently than generally accepted. A complete historical and bibliographical review will not be attempted here as Mathe'[2] has fully and admirably covered the subject. On the Continent, Duval and Gre'goire[3] reported their exhaustive study of the role of aberrant vessels in the pathogenesis of hydronephrosis in conjunction with Legeau et al[3], in which they give credit to Boogard, who reported the first case of this nature in 1857. In this country, Eisendrath[4,5] not only summarized and described the different types of accessory arteries but brought up to date in 1920 all the cases reported in the literature from all authors.

Early recognition of these cases is of considerable importance if renal tissue is to be conserved. Only conservative surgery can be done in the early cases as shown by Fenger[6], who recognized this condition early, and carried out his classical conservative operation for valve like formations of the renal pelvis. Judd[7] has modified this original operation by an ingenious procedure. However, advanced hydronephrosis always results in complete destruction of the kidney necessitating nephrectomy. Therefore, hydronephrosis should be considered in all cases presenting genito-urinary symptoms.

From an etiological standpoint, the majority of observers is of the opinion that anomalous vessels are a doubtful factor in producing obstruction at the uretero-pelvic junction. Thus, to quote from Pannett[8], "The urenephros forms first and the descending pelvis extending downward carries the commencement of the ureter with it, thus bringing about the kinking over the abnormal vessels." Fig. 1 (after Lawson), shows such an early case. Kelly[9] also was of the same opinion. Mathe'[2] has given in his complete paper the mechanism of gradual obstruction, due to various mechanical factors arising from the presence of the aberrant vessel. The operative findings of the case herein reported bears out the above facts to a striking degree.

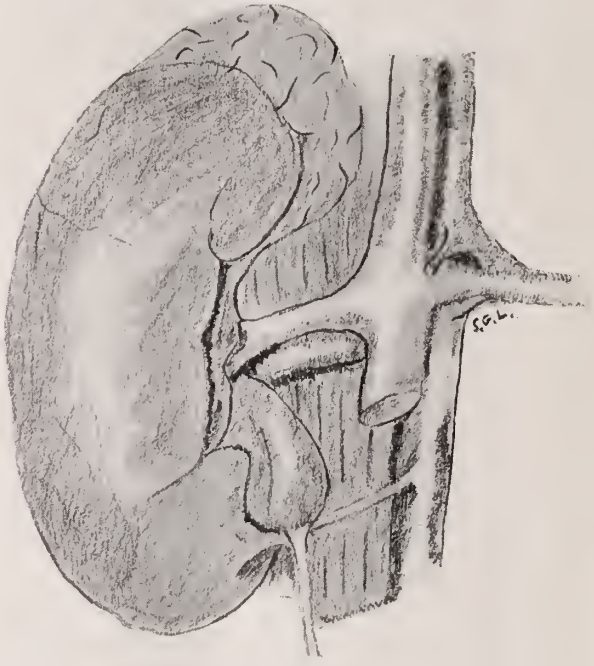


Fig. 1. An Early Case

Relation of vessel to ureter with dilatation of pelvis of kidney. (After Lamson.) Redrawn by the author from Surgical Clinics of N. America, Dec. 1928.

In this type of case, the question of treatment resolves itself into one of two methods. Many operators have tried conservative plastic operations on the pelvis with object in view of preserving a fair amount of parenchyma, but where hydronephrotic atrophy was progressive, a secondary nephrectomy was the rule. This clinical observation is confirmed by the experimental work of Hinman[10], who found that the obstructed kidney would continue towards progressive atrophy in the presence of a compensatory hypertrophy of the

*From the Department of Surgery, Miriam Hospital. Read and discussed at Staff Conference, Miriam Hospital.

opposite kidney (unobstructed) even after the cause of the obstruction had been removed. In this particular case, so little normal parenchyma was found at the time of operation that nephrectomy was thought to be the wisest procedure.

Case Report

Miss R. K., hospital No. 2,583, school girl, aged 18. Entered the Miriam Hospital December 3, 1928, complaining of nausea and vomiting with dull pain in the left lumbar region of two years' duration. During infancy and early childhood, she had Measles, Whooping Cough, and Chicken Pox. At eight years of age, she was ill for six weeks with "Influenza." At first, patient had recurrent symptoms of nausea and vomiting following dietary indiscretions, such as too much pastry and sweets. Gradually she noticed the onset of pain with these "stomach attacks." Upon resuming a plain diet, the pain and nausea would disappear only to recur at no definite time. At no time would the pain extend down to the groin, but would be localized at the left free costal margin. At one time, her family doctor found albumin in her urine.

There is a negative history of frequency, dysuria, hematuria and nocturia. The urinary symptoms have been singularly absent in contrast to the clinical findings. There have been recurrent rises of temperature and chills concomitant with the gastric symptoms.

Abdominal examination reveals a definite bulging of the upper abdominal wall to the left of the median line. This bulging is fixed and does not move with respiration. Fluctuation is not present. A definite mass can be felt extending from the free costal margin to the umbilicus. Pressure in this area, however slight, elicits pain. Pulmonary type of breathing is present. The pain is most intense in the left costo-vertebral area. The right costo-vertebral area is not painful at all to the deepest pressure. The spleen cannot be felt. The area below the umbilicus shows no pathology. The groin shows the presence of small discreet lymph glands.

On December 6, cystoscopic examination was done. This revealed a normal right orifice with normal mucosa throughout. The urine collected from the right pelvis flowed in an intermittent stream, contained no pus nor bacteria, and eliminated 34 per cent. phthalein in thirty minutes. The appearance time of the dye was six minutes. The left orifice appeared punched out, similar to the opening of a diverticulum, but around the periphery of this opening, the mucosa was injected and showed inflammatory process of long standing. The catheter easily entered the orifice, but could not be advanced farther than 3 cm. because of some obstruction. No dye appeared from this side at the end of thirty minutes and no urine from this side could be obtained. Injection of 12.5 per cent. sodium iodide into the left orifice did not throw any shadow above bladder, showing catheter did not advance up the ureter. Subsequent injection of the right ureter showed a normal ureter and pelvis.

A few days later the patient felt the left sided pain had partially disappeared. Examination at this time showed a marked disappearance of the "tumor" with an increase in the urinary output. The phthalein output at this time for two hours



FIG. 2

Pressure of left-sided mass against greater curvature of stomach. Note smooth outline of retroperitoneal mass in its periphery.

was 75 per cent. Evidently irritation of the left ureter had set up a peristaltic wave, causing a temporary drainage from the left kidney pelvis.

A gastro-intestinal study was then made. Figure 2 shows how this mass compressed the greater curvature of the stomach, producing an hour glass contracture, and explaining the predominant gastric symptoms. The left dome of the diaphragm was not elevated and moved freely with respiration. No other pathology was found in the remainder of the gastro-intestinal tract.

Operation was performed on December 15, 1928 (Drs. McEvoy, Lenzner, Webber). A left oblique incision was made parallel with the quadratus

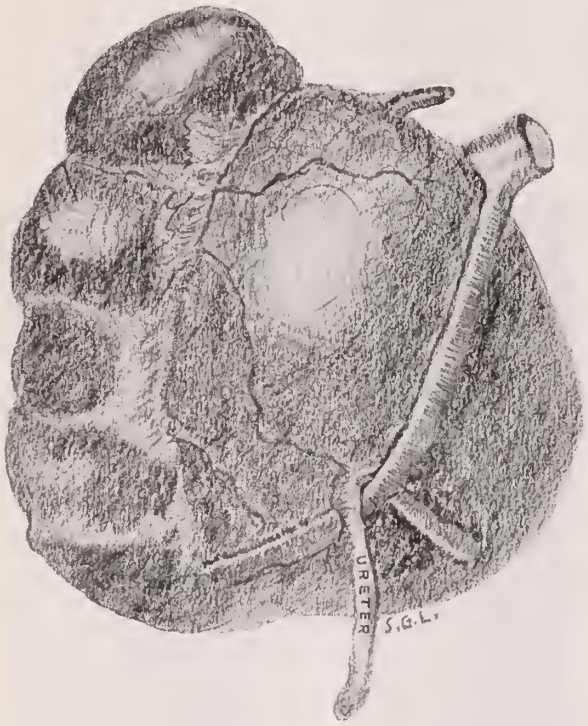


Fig. 3

Hydronephrotic kidney removed at operation—Kinking of ureter by anomalous vessel. Posterior view.

lumborum, extending high up into the costo-vertebral angle, avoiding ilio-inguinal and ilio-hypogastric nerves. Good exposure of the field was obtained. As the false capsule of the kidney was opened, considerable adhesions were found between capsule and kidney; the lower pole of the kidney was easily brought out of the wound. An anomalous blood vessel was then found crossing the uretero-pelvic junction posterior to the ureter coming from the abdominal aorta. There was a marked change in the size of the pelvis and the kidney. The pelvis was greatly ballooned out, very thick and fibrous in nature, above the anomalous artery (see Fig. 3). The ureter was of normal size below the artery. The kidney was greatly enlarged with great diminution of the parenchyma. At the upper pole, a large abscess could plainly be seen involving the entire cortex and parenchyma. The anomalous artery was then doubly tied and cut. The pedicle of the kidney was isolated, double clamps applied, two sutures No. 2 Chromic gut applied, the pedicle cut, and kidney removed. One cigarette drain was placed in the bed of the kidney. The wound was then closed in layers, suturing lumbar fascia and muscles with No. 1 chromic catgut.

Gross Pathology: The kidney weighed 189.6 gms. The greater part of the parenchyma was destroyed; the center of the kidney was entirely replaced by the very large pelvis, which was a very thick and fibrous structure. The upper pole was the seat of a large abscess. The length of the kidney was 13.75 cm.; width of the pelvis 7.5 cm. and the width of the kidney parenchyma itself was 4.4 cm. On cut section, the capsule stripped with difficulty, the cortex was greatly thickened and replaced in entirety by connective tissue. The pyramidal area was thinned out, a very few normal appearing pyramids of faintly pink color were seen; the columns of Bertini largely replaced by connective tissue deposition. The lesser calyces were clubbed and lengthened. Also the larger calyces were greatly dilated. Attached to the lower pole of the kidney was the ending of an anomalous artery running directly across the pelvis to the uretero-pelvic junction. The diameter of the ureter was normal below the artery.

Microscopical examination revealed the following (Dr. Kennison):

Low Power: The capsule is somewhat thickened and shows marked round cell infiltration and deposition of fibrolastic tissue. The glomeruli are shrunken. Bowman's capsules are distended with some exudate present in many of them. The ascending and descending Henle loops are collapsed so that the epithelial walls are in contact with each other. The connecting tubules, on the other hand, are widely distended without exudate to any extent. In several areas there is definite cystic formation displacing the parenchyma.

High Power: Various sections show some moderate differences in appearances. In general there has been a very marked degeneration and destruction of the normal cellular elements of the entire pyramidal region of the kidney. In some places this has gone on to total destruction and entire wiping out of cellular landmarks. Most of the glomeruli are shrunken and are undergoing chronic inflammatory changes. In some instances there have been shedding of normal epithelial cells into the periglomerular region. The blood vessels show flattening of intima with obliteration of all coats by fibroblastic tissue and in the larger radicles, passive congestion is very marked. Diagnosis: Degeneration, cloudy swelling as the result of obstruction, Hydronephrosis.

The postoperative convalescence was smooth and uneventful. The patient was discharged from the hospital on January 12, 1929. Follow up at present writing shows no genito-urinary symptoms and the renal dye function is 60-70 per cent. for two hours for the right kidney.

Summary

Hydronephrosis secondary to aberrant vessels is characterized by intermittent, regular attacks of renal pain, occurring over a period of months or years. Genito-urinary symptoms may be entirely lacking in these cases.

In the early type of case, conservative measures are the rule, but where a large portion of the kidney parenchyma has been destroyed by the pressure of the increasing size of the pelvis, secondary operations of nephrectomy must always be done because atrophy is progressive in nature. In this particular case, relief of the obstruction by division of the obstructing artery, would have given no assurance of complete relief of symptoms even if a plastic operation was done on the pelvis of the kidney.

Therefore early recognition of this clinical entity on the part of the clinician and surgeon will save many kidneys.

Acknowledgment is here made with thanks for the constructive criticism of Dr. McEvoy in the study of this case and the care on the part of Drs. Gerber and Alberts in their roentgenological examination.

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THE FUTURE OF SURGERY

In the survey of the future of surgery, Lewis Hugh McKinnie, Colorado Springs, Colo. (*Journal A. M. A.*, April 6, 1929), asserts that men imperfectly qualified, even assuming a liberal standard, are doing surgery in every community. Students, under present conditions, cannot be adequately trained for the diverse activities that they will inevitably assume after graduation. The public is not safeguarded by the present diploma from a medical school, however well accredited it may be, since it seems to imply qualifications as a surgeon or specialist, which it cannot guarantee. The financial burdens devolving on the surgeon-to-be are so heavy that they seriously impede adequate training. He says the growing strength of the university and its ascendency in medical education suggests: (1) the graduate school of medicine as the coming standard; (2) the separation of the special fields of medicine prior to the granting of degrees, and (3) university supervision of postgradute study leading to a special degree.

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EDITORIALS

THE AMERICAN COLLEGE OF PHYSICIANS

The program at the recent meeting of the American College of Physicians in Boston was probably the best that society has ever held. The society seems to have taken a distinctly new lease of life and most fortunately chose a city where clinical and teaching facilities were unexcelled.

The clinics at the various hospitals were most interesting and subjects presented were very timely and well chosen. Best of all the men selected to read the papers and to conduct the clinics were doctors who can make meetings interesting.

The selection of the city of Boston for this year's gathering was advantageous to Rhode Island doctors because many of them will not be able to attend the convention of the American Medical Association in Portland, Oregon, later in the year. It might be well for the American College of Physicians to choose for its meeting a city in another part of the country from that selected by the American Medical Association.

WHEN THE DOCTOR IS THE PATIENT

Many times in the course of his practice the average physician is called upon to care for a sick colleague. While he usually feels a real satisfaction in the knowledge of the confidence thus placed in him by his fellow practitioner it is the truth that he often undertakes the special responsibilities which his task involves with misgivings. This is not because he fears lest his patient with his intimate acquaintance with disease, will be critical of his methods or doubtful of his judgment but because, on the basis of previous experience in the case of members of his own profession, he knows that the doctor often makes a very unsatisfactory patient. This certainly should not be the case. No one should know as well as does the practicing physician how a patient should deport himself during an illness. The doctor, then, who spends his life ministering to the physical ills of others, trying perhaps, with a bit of impatience at times, to show them how to bear their troubles with equanimity, and who then, when his own turn has come, cannot show that fortitude and self control that he has expected of his patients, is a sorry spectacle. As has been so aptly said "the doctor who prescribes for himself has a fool for a patient" and yet one part of his treatment he alone can control, that is the mental attitude which he maintains towards his illness. It is true that his knowledge of disease raises in his mind specters as to complications and the ultimate prognosis which are mercifully spared the layman; while judgment and self control are often undermined by toxemia and weakness. Nevertheless native courage, a well balanced emotional control and a sound philosophy of life will carry him through many difficult situations if he has developed these qualities. One of the commonest mistakes that the sick doctor makes is that of trying to "run his own case." Until he has agreed that he is "licked" and is willing to pass entire control of the situation over to his physician and nurses the situation is almost hopeless. It is the experience of most of those who have physicians under their care that doctors make either the worst or the best of patients. Those who are masters of themselves and who can "practice what they preach" adding to their fortitude the factor of intelligent understanding co-operation, are patients to whom it is a pleasure and a privilege to bring professional aid. Such men are well equipped to care for the sick of their communities. It is difficult, on the other hand, to see how a man who lacks the ability to "stand the gaff" himself can qualify as a guide and helper to lead his patients safely in paths too thorny for himself to tread.

Personal experience is our greatest teacher fixing her lessons in our minds with a sureness that nothing can eradicate. What, then, can be more valuable in the education of a doctor than an illness successfully endured? Thus he may learn what his patients are really facing when he lightly orders for them a high enema, a hot pack or a dose of epsom salts, or when he decides to tap a chest or wash out an antrum. Thus, also, he can come to appreciate the value of nursing technique and the priceless ingredient of kindliness in bedside care. Above all he can prove to himself and to others what manner of man he really is and whether or not he is really qualified to play the part of physician by his own reaction to the acid test of illness.

THE MASSACHUSETTS GRADUATE COURSE IN CANCER

A very interesting experiment has just been concluded in our neighboring state of Massachusetts. The Massachusetts Medical Society has conducted a three day course in cancer for graduates. This was held with the assistance of the Massachusetts Department of Public Health and the local committee of the American Society for the Control of Cancer.

In these three days there was a very intensive and systematic survey of the entire subject of cancer from the pathological, surgical, medical, and radiologic aspects. Clinics, demonstrations and lectures were conducted at various hospitals, and arrangements were so handled that none of the demonstrations was overcrowded. At the same time everyone attending the course was able to obtain a comprehensive outline of the entire problem of malignancy.

This was the first time in the history of the state that any such project had been carried out. A similar intensive short course had been conducted a short while before in the state of Pennsylvania under the leadership of Dr. Jonathan Wainwright.

In the preliminary conferences before the course was arranged, those in charge felt that probably a fair representation of physicians would turn out, but they had no idea that the course would prove as popular as it did. The total registration for the course was 410, of which 211 were physicians and 199 dentists. The unusual and very large attendance of dentists was due to the fact that the first day of the course was devoted very largely to problems connected with malignancy of the mouth. The Massachusetts Dental Society cooperated very thoroughly in the arrangements. This willingness on the part of the dentists to learn something about cancer in and around the mouth is a very gratifying sign. It is upon the dentists that considerable reliance will have to be placed in the future for the early detection of oral cancer.

Altogether this novel experiment proved to be very gratifying to those concerned in arranging for the course, and of tremendous value to those who attended it. It is hoped that similar intensive courses will be available in the future for other states where there are proper facilities for clinics and demonstrations.

IN MEMORIAM

Resolution on the Death of Ransom H. Sartwell

WHEREAS: Almighty God has taken from us, Dr. Ransom H. Sartwell, Superintendent of the State Hospital for Mental Diseases, where his splendid qualities as a man, and his conscientious and efficient services as executive were known to all of us, and

WHEREAS: Dr. Ransom H. Sartwell was for many years a member of the Rhode Island Medico-Legal Society giving unselfishly of his time, his experience, his knowledge, and deep interest, in the welfare of our Society

THEREFORE: Be it resolved that the members of the Rhode Island Medico-Legal Society deeply regretting the loss of Dr. Sartwell to the State he served so well, and to this Society, and wishing to express our deep sorrow at his untimely death, order a copy of this resolution to be spread upon the records of the Rhode Island Medico-Legal Society, and a further copy to be sent to the family of our departed friend and brother.

Roy L. McLaughlin,
Wm. J. Harper,
Jacob S. Kelley, M.D.

NOTES

"COUNCIL PASSED"

Notification is being sent to the medical profession that Haley's M-O, Magnesia Oil has been accepted for N. N. R. of the American Medical Association. Henceforth the product will be known as Magnesia-Mineral Oil (25) Haley.

MISCELLANEOUS

THE EFFECT OF QUINIDINE SULPHATE ON VENTRICULAR TACHYCARDIA

Samuel A. Levine and Marshall N. Fulton, Boston (*Journal A. M. A.*, April 6, 1929), report their experiences with this drug in ten cases. The exact dosage is a variable matter and must be determined by trial and error. They usually begin with 0.3 Gm. of quinidine sulphate and repeat the dose every four to six hours, raising it 0.1 or 0.2 Gm. each dose or in urgent cases even more rapidly. In one instance it was necessary to give 1.5 Gm. five times within twenty-four hours before a normal rhythm was established, less than this amount being ineffective. After the return of the normal rhythm the patient is kept for a variable length of time on 0.2 or 0.3 Gm. three times a day or oftener if necessary. Quinidine sulphate has in most instances a specific effect in restoring a normal rhythm. Ventricular tachycardia occurs occasionally in patients who have no organic heart disease but more commonly in those with coronary thrombosis. Although quinidine does not have any effect on the other complications of coronary thrombosis, such as rupture of the heart or production of emboli, its beneficial influence on ventricular tachycardia is most dramatic and may be life saving. It is highly probable that ventricular tachycardia is of the nature of a circus movement like that of auricular flutter and auricular fibrillation, and that the effect of quinidine is similar in all these conditions.



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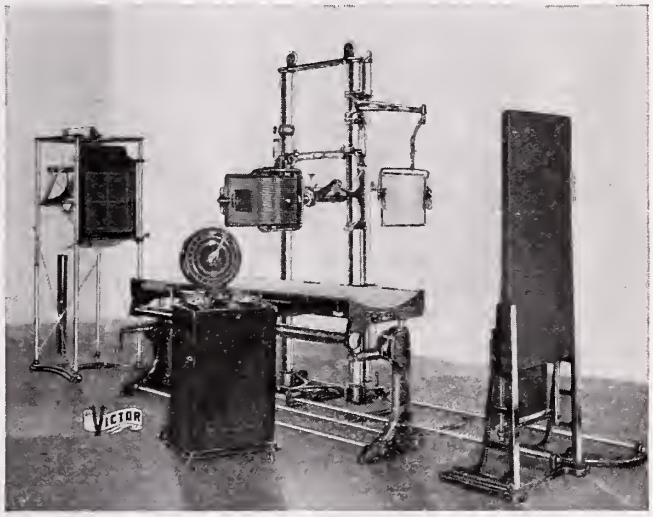
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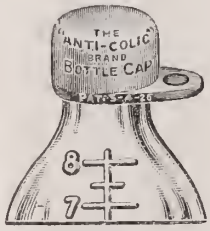
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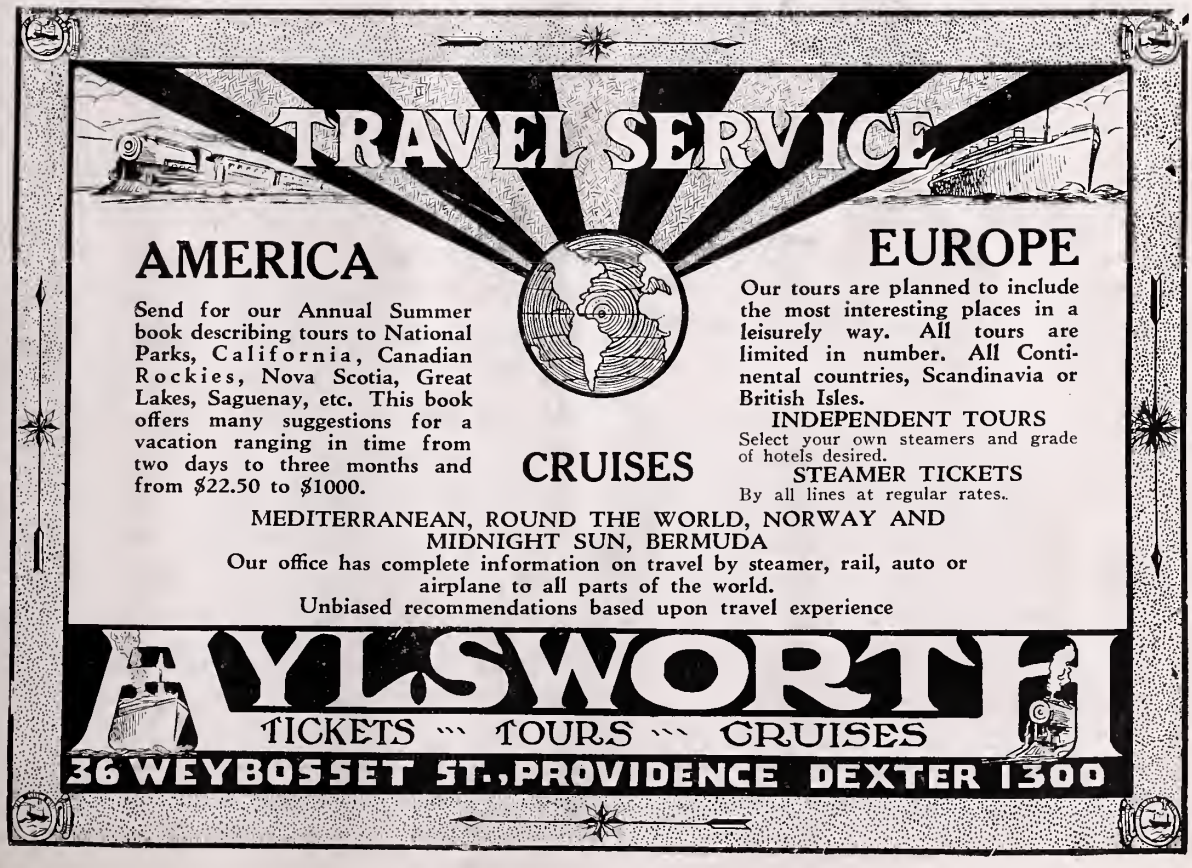
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Marshaling scientific and medical opinion for the improvement of diet and of health

MODERN business intelligence realizes that the interests of an industry cannot be permanently advanced unless the public is benefited by such an advance. The Sugar Institute—representing an association of the cane sugar refiners of the United States—is proceeding on the belief that the position of the sugar industry cannot be permanently enhanced unless such enhancement results concurrently in improved diet and health for all ages and classes.

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Every effort is being made to discourage the public from gorging or overeating sugars or other sugar-containing foods.

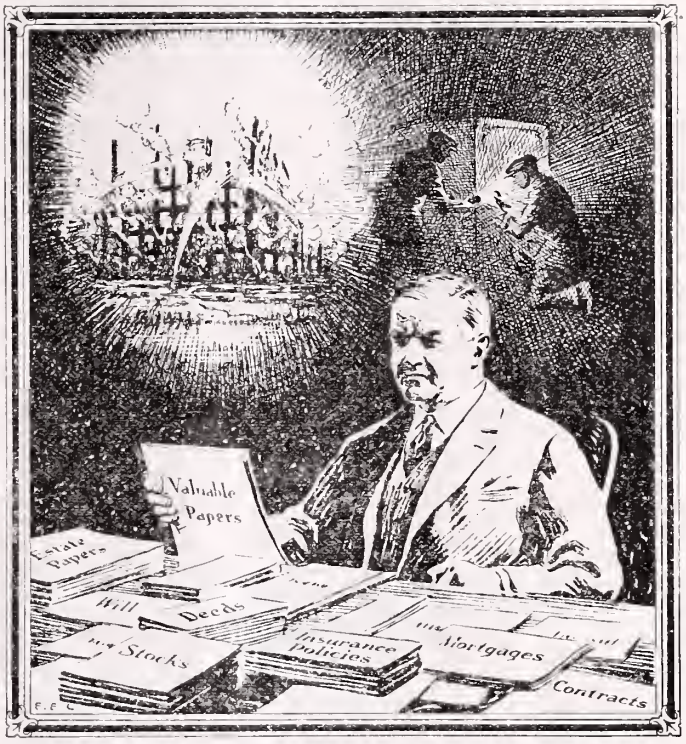
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The dangers of extreme dieting for unnatural weight reduction as pointed out by numerous physicians are being emphasized.

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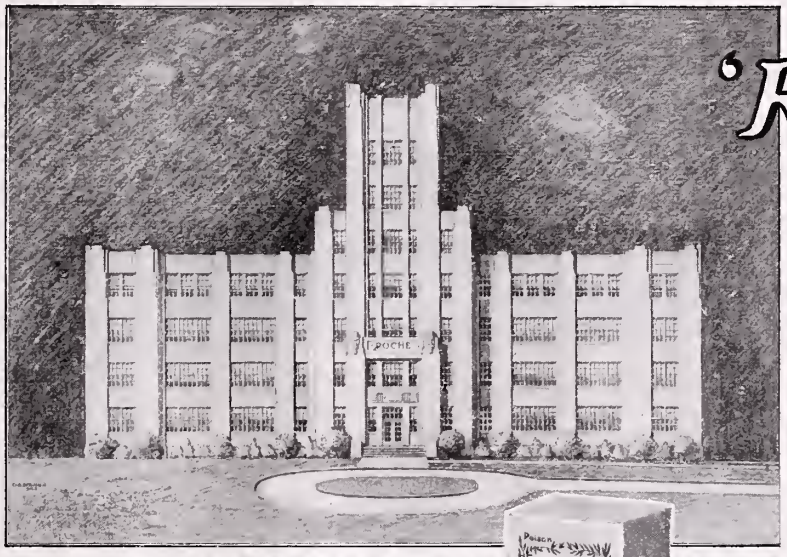
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At the left and right—Types of bales of Ma Huang in the Lilly warehouses. Eli Lilly and Company are the largest importers of Ma Huang, the source of Ephedrine, in America.

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TO serve physicians with their current needs and to coöperate in the advancement of materia medica, the manufacturing pharmacist and biologist must have facilities for research in diverse fields.

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KNOX *is the real* GELATINE

Contains No Sugar

WINTER SALAD *(Six Servings)*

	Grams	Prot.	Fat	Carb.	Cal.
2 teaspoons Knox Sparkling Gelatine	4.5	4	....	....	....
¼ cup cold water	....	....	....	....	....
½ cup hot water	....	....	....	....	....
½ teaspoon salt	....	....	....	....	....
¼ cup vinegar	....	....	....	....	....
1½ cups grated cheese	150	43	54	....	....
½ cup chopped stuffed olives	70	1	19	8	....
½ cup chopped celery	60	1	....	2	....
¼ cup chopped green pepper	25	....	....	1	....
⅓ cup cream, whipped	75	2	30	2	....
Total		51	103	13	1183
One serving		8.5	17	2	197

Soak gelatine in cold water. Bring water and salt to boil and dissolve gelatine in it. Add vinegar and set aside to chill. When nearly set, heat until frothy, fold in cheese, olives, celery, pepper and whipped cream. Turn into molds and chill until firm. Unmold on lettuce leaf and serve.

SPINACH SALAD *(Six Servings)*

	Grams	Prot.	Fat	Carb.	Cal.
1½ tablespoons Knox Sparkling Gelatine	10	9	....	....	....
¼ cup cold water	....	....	....	....	....
1¼ cups boiling water	....	....	....	....	....
2 tablespoons lemon juice	20	....	....	2	....
½ teaspoon salt	....	....	....	....	....
1½ cups cooked spinach, chopped	300	6	....	7	....
2 hard cooked eggs	100	13	10.5	....	....
Total		28	10.5	9	242.5
One serving		5	2	1.5	40

Soak gelatine in cold water and dissolve in boiling water. Add lemon juice, salt, strain and chill. When nearly set, stir in chopped spinach, mold and chill until firm. Serve on lettuce hearts or tender chicory leaves and garnish with hard cooked egg, cut lengthwise in sixths and sprinkled with paprika. Serve with mayonnaise.

If you agree that recipes like the ones on this page will be helpful in your diabetic practice, write for our complete Diabetic Recipe Book—it contains dozens of valuable recommendations. We shall be glad to mail you as many copies as you desire. Knox Gelatine Laboratories, 436 Knox Ave., Johnstown, N. Y.

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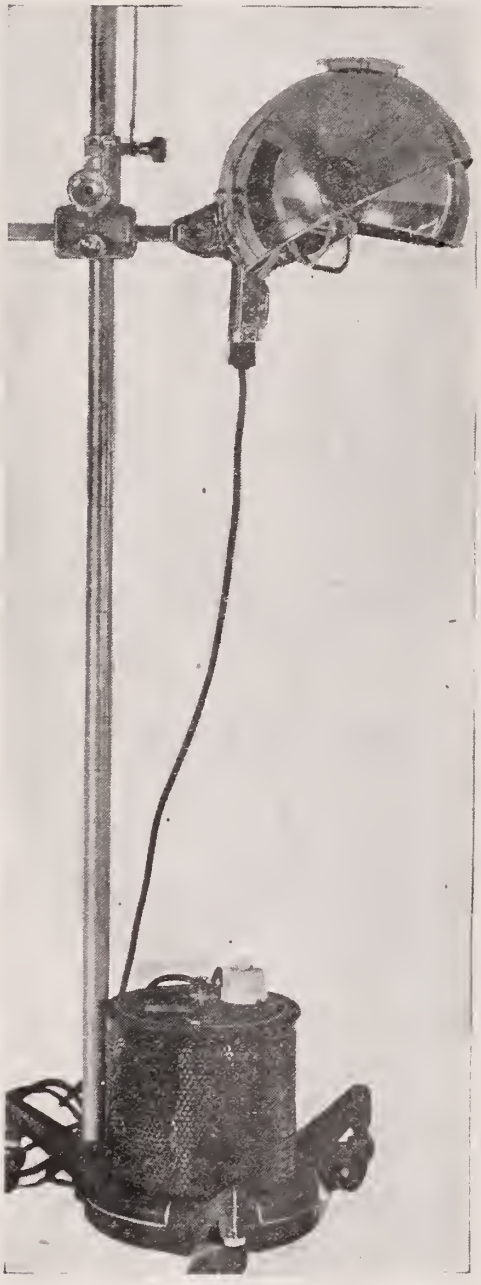


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ORIGINAL ARTICLES

PRESIDENT'S ADDRESS*

By Arthur H. Harrington, M.D.

Providence, R. I.

Fellows of the Rhode Island Medical Society and Guests:

I believe that it was in the year 1883 that I was first admitted to fellowship in the Rhode Island Medical Society, after having passed a written examination upon the usual subjects of that day. The Board of Examiners of the Society decided on the merits of my performance on that occasion, which could not, I am sure, have been in any manner exceptional, that I was considered worthy of endorsement for membership in the Society.

It was my privilege during the brief period that I was a resident of Rhode Island at that time, and occasionally after my removal from the State, to attend some of the meetings of this Society. I recall, on the occasion of the annual meetings, that the address by the President of the Society, or by some one chosen by him to deliver an address befitting the occasion, was the leading feature of the program of the day. When not delivered by the incumbent of the president's chair, it was given by some distinguished physician, either from within or without the State, or it might be that there was chosen for this function some layman or member of a profession other than medicine, noted for prominence or achievement in some particular field, scientific or literary.

Be that as it may, these addresses were scholarly, scientific, sometimes evidently the result of painstaking or original research. They were apt to cover the whole field of the subject in hand. They were an intellectual and a scientific treat. They sometimes contained ten thousand and more words, and required from an hour to considerably over for delivery. The older members, I am sure, will recall the body, this society and its guests composing themselves for the anticipated instructive and delightful entertainment, and giving uninterrupted and rapt attention to the words of the speaker.

While this was the character of the annual addresses for many years, in very recent years a change has occurred. The so-called annual addresses as delivered by the presidents of late years have usually taken on a briefer form. They have partaken somewhat of the character of references to some of the activities of the Society for the year just closing, setting forth perhaps certain observations, recommendations or policies which to him seem wise for consideration.

I do not feel that we ought to charge this change in custom to any lessening of our cultural tastes or scientific trends, but rather to the necessity in these days of active movement in all public affairs to attend to the more obvious and pressing requirements.

So I shall follow the practice of more recent years of dealing briefly with some matters, with which we may have more or less acquaintance, but which seem to me worth emphasizing, and finally bringing to notice two subjects which have both a professional and a community interest.

The flourishing condition of the Rhode Island Medical Journal should come in for a large share of our commendation. As the official organ of this Society it supplies a medium for information upon many topics of interest to us, both individually and as an organization, which might not otherwise reach us so readily, if at all. It has an able editorial staff, capable of furnishing us with discriminating and forcible articles on matters of vital importance, both general and special. The zealous managing editor and the alert business manager have brought this publication to a high standard of excellence. In fact the Journal is today a going concern, as the expression is, both from the literary and the financial standpoint. From sentiments which I have heard expressed it is not likely that a policy which would supplant the Rhode Island Medical Journal by relin-

*Read before the Rhode Island Medical Society at the annual meeting, June 6th, 1929.

quishing it, to join with or be absorbed by any wider sectional medical publication, as has been suggested by outside interests, would be met with any favor by this Society.

I am going to take occasion to call attention to one way in which the Managing Editor can be given greater assistance and encouragement. It is by reminding you all that those taking part in the medical programs of the Society, by the reading of papers, should observe faithfully an obligation which rests upon them. It is embodied in Article XII, Section I of the Rules and By-Laws. It reads as follows: "All papers read before the Society or any of its Sections shall become its property. Each paper shall be deposited with the Secretary when read." I understand that sometimes considerable difficulty is encountered in finding such papers available when desired for publication, and sometimes they have been unobtainable.

As one of the duties of my office I have been a visitor to the district medical societies, with one exception, namely: the Newport District Society and I shall have to beg your indulgence for that failure. In one district where I made special inquiry I found that there is a one hundred percent membership of all the physicians in the district eligible for such membership. I was informed that the officers and members have systematically sought without delay the membership of every eligible new-comer in the district. I trust that a like enthusiasm to keep up the membership of the district societies exists throughout the state. I am taking occasion to mention this for it should never be lost sight of that the district societies are the basic units of the state society, and it is only by the keeping up of the membership in these units and their integration with the state society that the latter can function effectually. Therefore a responsibility rests primarily upon the officers of the district societies, not only to strive for the maximum membership possible, but to urge all district members to take advantage of that open door to the state society.

One can not with entire satisfaction record in every instance the attendance at the meetings of some of the district societies. This is, however, an observation that has to be made of many medical organizations. In one district at one time in a recent year the attendance was so slight that there was serious thought of discontinuing the regular meetings. There are numerous special medical societies, clinical clubs, and gatherings for medical discussion, which one does not like to forego, because they are both practical and helpful, and no doubt have something to do with affecting attendance at the regular meetings of the societies.

I learn that the president of a district society or the committee on papers has a good deal of field work to do to obtain speakers or readers. Sometimes a meeting is omitted because of the failure to obtain a speaker.

The practice of having readers from outside is commendable, because of its broadening and stimulating effect, but as an exclusive practice it may be of doubtful value. Is there not enough material and is there not that degree of experience, even in the smaller district societies, for members to take a larger part in the presentation of papers? It may be that the brief notice and the limited time which the busy practitioner has to allow for preparation stands in the way often times. But I believe that in the absence of a definite system, some plan might be adopted, which would give a favorable result. For instance, if it is understood that papers are to be presented by members in the alphabetical order of their names, except when a reader is to come from outside, this ought to give ample opportunity for the planning and preparation of instructive papers. The prospective reader would know months beforehand when he would be due to present a paper. His subject even could be announced at the preceding meeting and preparation for discussion by the members could be made.

In my experiences during the past year as the President of this Society, I have come to a full realization of the valuable assistance given to the President by certain officials of the Society, on whom he has to become very dependent. I refer for one to the Secretary, without whose aid I know that I should have been at a loss a number of times as to how to proceed. I wish on this occasion to express to him my grateful appreciation.

There is another official to whom we are all under an obligation, even when our dues are paid in full, and that is the Treasurer. A great re-

sponsibility rests upon him in caring for the finances of this organization and seeing that we are always in a solvent position. To care for capital funds in these times and to invest them conservatively and yet try to have them yield the requisite sum, requires capable financiering. In this respect, among others, we ought to realize the valuable service our Treasurer gives us. That these officers continue to serve from year to year speaks volumes for their unselfish interest in the Society.

There are the honored names of Fellows who have been mentioned here this morning, now appearing in the necrology column. Most of them were among us for long years, we shall miss their faces. The devotion of them all to their high calling was a living example while they were here, and their memories will long remain as an inspiration.

I wish to express my appreciation at the ready response I have received from those I have called upon to read papers or to take part in discussions.

There is one thought in this connection I will advance. It would be most helpful if there was a volunteer spirit among the members, which would lead you to offer to present papers at these meetings. There must be many-a-one from first to last who has something valuable to impart. I fear that modesty sometimes interferes. But that can be easily proved to be a mistake, for when there is a subject on which one has placed special effort, or when he has an experience of value, is it right to withhold anything from his professional fellows, which may have possibilities of enriching them?

A Psychopathic Hospital

There has been one advance within the year in this community of far reaching significance. It relates to a subject, various phases of which have been discussed now and then before this Society for years. I refer to the Psychopathic Hospital idea. This idea has at last taken shape in the form of a Psychopathic Department at the Providence City Hospital. This long and pressing need, which has been so repeatedly urged by physicians, will become an actual fact, when, in the near future, the doors of the structure now in process of erection at the Providence City Hospital, shall swing open for the reception of psychopathic patients.

This is a forward step which will redound to the everlasting credit of the superintendent and officials of the Providence City Hospital, who have for years so eloquently and with never failing patience urged this humane measure, and to that of His Honor, James E. Dunne, Mayor of Providence, and the City Fathers who have consummated this project.

Here there will be given first aid to mental cases. I have reserved one item in regard to acts of the legislature in order that I might mention it in this connection. It is something that we have been striving for for years. It is that this first aid I speak of will be available without the intervention of a legal process and the law's delay. Any legal proceeding found to be necessary follows later. This means that persons in the City of Providence in need of medical attention from mental causes can receive immediate care, just the same as a person found upon the street in distress from physical causes or from bodily injury can be taken at once to a general hospital.

The establishment of the Psychopathic Department is an integral part of the public health problem, I will say of the mental hygiene program of Providence.

This clinic with other mental hygiene clinics (some have already been called into existence by the Rhode Island Society for Mental Hygiene, and in certain instances are being initiated in some of the hospitals in Providence) need to be developed and co-ordinated to take early cognizance, not only of mental disease, but of those minor mental maladjustments, which are such prolific causes of disability and ineffectual lives.

It is being realized today that we must begin with the young. Dr. Frankwood Williams, Director of the National Commtitee for Mental Hygiene, states that at the present time there are one million children in the schools in the United States, who are looking forward to industrial and professional occupation and social success, who will become inmates of institutions for mental disease if the present incidence of mental disease continues. I believe that the Psychopathic Department of the City Hospital will prove its great value in demonstrating what it can accomplish in relieving and even in preventing mental maladjustments, and become an educational factor in teaching the public to understand that mental af-

fections are as much a disability as any other disease, and for one to place himself in the care of a psychopathic clinic or psychiatrist need not carry with it any feeling of shame.

Cancer

In the medical programs of this year one of the subjects to which special attention has been called is that of cancer. The entire March meeting was devoted to this topic. As you all know my professional work has been in a field far from that which has to do with either the medical or surgical aspects of cancer. It would be presumptuous in me to enter upon any of the clinical or pathological considerations of this disease, but it has occurred to me as entirely appropriate to employ this occasion to emphasize briefly some phases relating to the subject of cancer to which there is dire need for that degree of attention everywhere, which it is known today, can give practical results in adding to the number of cures, in mitigating a great deal of the suffering which the disease entails and in reducing mortality.

I refer largely to organized movements, both national and in some states; also to systematic methods, which are being tried out for the purpose of informing the public of the nature of cancer; as a part of this movement the creation of adequate conditions to make readily available the early diagnosis and treatment of cancer, proper attention for those who are without means, and the supplying of as much physical comfort as possible for the final days of those who it is apparent must succumb to the malady.

Physicians are well aware that there has been a marked increase in the number of deaths from cancer as reported from the United States registration areas in recent years, but it may not come amiss to cull out a few statements from the published records of the American Society for the Control of Cancer. This society is in the sixteenth year of its work, and one of the objects of the society is the collection of statistical information concerning the prevalence of cancer.

The figures which relate to deaths which will follow represent official compilations made by the Bureau of the United States Census from copies of original death certificates, supplied by the several states in which the deaths occurred, which have been published and circulated by the American Society for the Control of Cancer.

At the present time cancer is regarded as the fourth most frequent cause of death in the United States.

In 1923 the registration area in the United States comprised 38 states and 14 outside cities. The number of deaths reported from cancer the following year was 91,138. If the rest of the continental area of the United States had as many deaths in proportion the number would have been about 103,000 in that year. Notwithstanding that the registration area has been expanding and consequently strict comparisons by periods can not be made, yet from the tables which have been made the rate of increase of deaths from cancer has been remarkably consistent. Whereas in 1900 there were 63 deaths per 100,000 of the population; in 1924, there were 91.9 deaths per 100,000 population.

For the State of Rhode Island the number of deaths from cancer reported in 1890 was 165; in 1900 it was 292; in 1910 it was 469; in 1920 it was 607, and in 1928 it was 842.

Cancer is not a reportable disease anywhere in the United States. Obviously cancer being a disease of comparatively long duration, many undoubtedly die of some other disease, for instance, pneumonia, and are not reported as cancer, so that the deaths from cancer are more than those reported. Again, in many instances cancer is not recognized before death. It is stated that in hospitals where autopsies are regularly performed this error has been found to be as high as 30%. Taking all factors possible into account it is believed that there are three times as many cancer cases in existence in a given place as there are deaths in that place in a year. This means that in continental United States there are at least 300,000 people with cancer at the present time. This is greater than the whole number of hospital beds in general hospitals in the United States, and also larger than the total number of persons with mental diseases in state hospitals in this country.

From 1900 to 1924 the death rate from cancer increased a little over 45%. The conclusion has been reached by foremost statisticians of the United States that cancer is increasing in this country. The public is ignorant of the symptoms

of cancer to a very large extent; it is not aware of the necessity for early treatment.

In Rhode Island with 842 deaths reported in the year 1928, on the basis that there are three times as many cases of cancer in the community as there are deaths in a year, the number of cases of cancer in Rhode Island would give the estimate in the aggregate as about two thousand five hundred.

It is not my purpose to discuss the treatment of cancer from the medical or surgical standpoint. I am not qualified to do so in any degree. But we can mention what is being done in this country in the way of general measures to enlighten the people about cancer; that organized efforts are being made by the American Society for the Control of Cancer, and in some instances by local organizations, with the object of teaching the public the adverse consequences which may follow that attitude of mind, so common, which ignores the possibility of cancer in their own persons: to show them that fear of investigation of any tissue change not readily explained, or of reluctance to refer to the physician symptoms of an unwonted kind, are the surest allies of the disease. We can consider how early treatment may be made available, and what results have already been attained by such methods as have been introduced in some places.

Let me first epitomize some of the statements which I find authoritatively made, which indicate the need of a greater appreciation, by the general medical profession, of responsibility for the mortality from cancer, and the need for exercising all the discrimination possible for either discarding or establishing a diagnosis of cancer. The following is probably a partial list:

"A considerable proportion of malignant tumors are not recognized by the doctor when the patient presents the indefinite early symptoms of the disease."

"Optimism too often replaces a careful physical examination."

"The great majority of cancers of the rectum are today treated as hemorrhoids for from one to six months."

"Uterine discharges are not properly investigated."

"Curettings are often not examined."

"Cancer of the tongue and mouth is permitted to advance because there is a positive Wasserman."

"Metastases are produced by repeated rough examinations."

"Malignant moles and epitheliomas of the skin are imperfectly removed."

"The neglect of a physical examination by the physician too often robs the patient of his or her chances to obtain a cure."

The position of the family doctor is a most important one in regard to cancer. It is to him that as a rule the patient first applies. Some malignant growths can be readily diagnosed, and that being done the responsibility is his to see that the patient receives the benefit of the most enlightened care known for that particular condition. In case of doubt, there should exist that attitude of mind which will prompt the physician without delay to refer his patient to the right quarter. It seems certain that to bring about a material reduction in the mortality from cancer in early and doubtful cases, the family physician occupies a strategic position. It is natural for the physician to hesitate to take a course which might prove him to be an alarmist. There is an unfailing rule, which the true physician never fails to observe. It is that the patient's life is the only consideration.

We can gather tangible evidence of what educational work in the control of cancer is accomplishing in some respects from the report of the Pennsylvania State Cancer Commission. At the time the report was made this Commission had been functioning thirteen years. For superficial cancers the interval between the patient's first appearance and the institution of treatment had been reduced in that length of time from 13 months to 4.5 months or 65%; for deep seated cancer from 12 months to 3.9 months or 70%.

Within twenty-five years the public has learned to understand that operation for appendicitis is necessary. The lay public should now be educated to understand the need of early recognition of the disease, cancer, and of the institution of its appropriate treatment at once.

In Massachusetts a vigorous campaign against cancer is being made, as we learned from our March meeting. Organized movements with the same end in view have been made in several states.

Already in this state we have made a beginning looking to the control of cancer. We have a State Chairman representing the American Society for the Control of Cancer. We have physicians and surgeons intensely interested in this subject.

Considering the increasing death rate from cancer in Rhode Island, as no one seems to be able to give a reason for the same, it seems an imperative obligation for some movement to be set on foot that we may know more about its incidence in the community, aside from information furnished by death returns alone: that some form of survey be made to include the entire state and to ascertain what clinical facilities need to be added, where and under what form of co-ordination they can be carried on to care for the condition as a state-wide problem.

It would be wandering far afield for me to attempt to make any specific suggestions. There are those who are near to this problem who are competent to do that, but considering that there are nearly 850 deaths in Rhode Island from cancer in a year and that there are possibly three times that number of cases scattered about the state, it does not seem to me presumptuous to say,

First: That the problem of cancer in Rhode Island ought to be studied in relation to its extent.

Second: That we need an educational program in Rhode Island to enlighten the laity in regard to all those features of the disease which should ensure early recourse to a physician for advice.

Third: That there should be adequate clinical facilities provided to care for the poor as well as the wealthy.

Fourth: That humane provision should be made for those who are doomed to go on to a fatal termination, whose financial resources are exhausted, and who have no one to give them proper care.

A charming story is told of Benjamin Franklin. He was witnessing the first demonstration of a purely scientific discovery, and the people around him said, "But what is the use of it?" Franklin answered, "What is the use of a new-born child?" The answer can be made "That perhaps at that tender age there may exist in such a fragile being the germs of talents which may fructify in a wonderful way."

Pasteur wrote: "A theoretical discovery has but the merit of its existence; it awakens hope, and that is all. But let it be cultivated, and you will see what it will become."

Dr. E. V. McCollum in writing his "Story of the Discovery of the Vitamins," says, "The growth of knowledge in this field like that in all other fields of science, was the result of attempts at experimental verification of philosophical speculation."

The experimental method did not begin until nearly the middle of the last century. The hope which Pasteur speaks of as inspired first of all by theory has in the end, in the field of science, often been attended with marvelous results. Witness for instance while working from theory what has been the reward from the discovery of Insulin. In a period of seven years thousands of children's lives have been saved by its use.

So the whole evolution of modern science can be traced back to philosophical speculation—to theory. It is, "the impact of modern science which has added twelve years to the average span of human life;" according to Winslow it has in fifty years lifted over one-third of the total burden of disease and early death.

Today the four foremost causes of death in the registration area of the United States are, in the following order: heart disease, pneumonia, cerebral hemorrhage, and cancer. It is on the last that I have ventured a few remarks.

The struggle to overcome this baffling disease, cancer, by scientific investigation centers around that hope which a theory awakens. These studies will go on as long as the disease is unconquered by those methods, but in the meantime we know that there are avenues open through educational methods, through early diagnosis and treatment, to far more people whose lives are threatened and destroyed than avail themselves of these helps. Shall we not do all we can to direct them in these ways?

As I am about to retire from the office of President of this Society I wish to express my deep sense of the honor which you conferred upon me a year ago. To have the highest gift within the power of this time-honored organization placed in my hand and to be counted in that long line of my distinguished predecessors has seemed to me a recognition beyond my merits, when I have contemplated the places they filled through their accomplishments as physicians and as citizens.

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HARRY TREADMAN	*Secretary*	Pawtucket

PROVIDENCE

Meets the first Monday in each month excepting July, August and September

ARTHUR H. RUGGLES	*President*	Providence
P. P. CHASE	*Secretary*	Providence

WASHINGTON

Meets the second Thursday in January, April, July and October

JOHN W. HELFRICH	*President*	Westerly
JOHN CHAMPLIN, JR.	*Secretary*	Westerly

WOONSOCKET

Meets the second Thursday in each month excepting July and August

W. A. BERNARD	*President*	Woonsocket
T. S. FLYNN	*Secretary*	Woonsocket

R. I. Ophthalmological and Otological Society—2d Thursday—October, December, February, April and Annual at call of President. Dr. Francis B. Sargent, President; Dr. Joseph E. Raia, Secretary-Treasurer.

The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Henry M. Boss, Jr., President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

PROVIDENCE HEALTH SURVEY

The health survey of Providence is under way. The matter of making this health survey came before the Providence Medical Association and was approved by that body. The health survey was suggested by the Council of Social Agencies, and was referred to a Health Survey Committee, which is under the Chairmanship of Mr. Walter A. Edwards. Among the Executive Committee members are included the President of the Providence Medical Association and the Past President, and on many of the sub-committees, the profession is ably represented. The survey is to be conducted by the American Public Health Association, which has conducted many similar surveys in other cities.

It is the hope of the health survey committee that a thorough evaluation of the health facilities of the city of Providence will be made, and that we will then be in a better position to know how the burden of health work should be borne, what plans to make for the future, and what, if any, over-lapping in our work is taking place at the present time.

Before this issue of the JOURNAL is in the hands of the medical profession, a letter will have gone out to all physicians in the city asking them for some data regarding their work with patients and the hospital facilities afforded them. We feel sure

that the medical profession will be glad to cooperate in this constructive piece of health activity, and we shall expect as a result of such a survey that much valuable information will be given to the medical profession, to the hospitals, and to all health organizations, so that the progress of our work in the future will be benefited by a fact-finding report.

A LOCAL MEDICAL DIRECTORY

A stranger in one of our cities who required immediate medical service might be at a loss to find a good doctor or any doctor to attend him. If he called a physician at random from the telephone directory, he would probably be connected with the office of a specialist who would refuse to attend him. If he wandered about studying doctor's signs, he would get little information, as a doctor's sign may indicate any one of the many specialties and schools. In the old days, he could have obtained all required information about the local medical profession at the corner drug store but as conditions have changed, the druggist has lost the intimate connection with the medical profession which he formerly enjoyed. Probably our stranger's best chance would be to consult the nearest garage, the garage often being the most reliable information bureau available.

The American Medical Directory contains the information about the local medical profession which is required, but this directory is too bulky and too expensive for general circulation. The annual reports of the hospitals enumerate the physicians who are on their staffs and indicate their specialties but these lists are not generally available. There is need for a local medical directory. This directory should include the name, address and telephone call of each physician, his school and date of graduation, his hospital connections, his society memberships and his specialty. In listing specialties, the custom of the American Medical Directory of listing those who pay special attention to some branch of medicine and those who practice a specialty exclusively should be followed.

The problem may be solved simply in several ways. In some localities the telephone company lists the physicians by specialties in the advertising section of their directory. This plan could be elaborated to form a satisfactory medical directory at little expense. Perhaps the best solution of the problem would be to influence the American Medical Association to publish their medical directory in sections corresponding to states or localities. In this form, the directory would, for most purposes, be much more valuable than the present unwieldy volume. Not only the laity, but also the members of the profession frequently seek information about physicians in the neighborhood. Conditions in distant parts of the country are less frequently sought for. While subscriptions to the complete directory would be fewer, the circulation of the sections would be tremendously increased. As the expense of the sections would be only a fraction of that of the complete work, physicians could afford to subscribe to each new issue of their local section. An attempt should be made to have copies of the local directory available in such convenient places for reference as stores, libraries and schools. The need for such a directory is evident.

NEED OF SUBURBAN HOSPITALS

A larger number of small towns and communities are appealing for doctors each year to fill vacancies caused either by changes in residence of the physician or by his death. The need of practitioners in rural districts is great and is denied by no one. Commissions have often made surveys and recommendations but the lack of country doctors seems to increase. In fact the exodus of the doctors from country districts apparently goes hand in hand with the departure of people in other walks of life from the country. Why should a physician live in a sparsely populated section where he has little or no opportunity to use the laboratory aids which are so often helpful in making an early diagnosis? At best, treatment based on guess work is unsatisfactory not merely to the patient but to the doctor. Why should not a doctor who has an inherent desire to progress mentally, move to an urban center where he has an opportunity for progress?

The mere granting of a sum of money to the physician is a very minor inducement which has failed repeatedly. When the rural communities are willing to offer inducements that will lead to progress in diagnosis and treatment of patients they will not lack for doctors. A small, well-equipped hospital will supply practically all the essentials to hold a physician in the country. It will make the doctor a more serviceable man to the community.

SOCIETIES

The Rhode Island Medical Society

COUNCIL

May 23, 1929.

The annual meeting of the Council was held May 23, 1929, at 4:15 at the Medical Library, the President, Dr. A. H. Harrington, presiding.

The report of the Treasurer, Dr. Jesse E. Mowry, as noted below, was presented, and discussed. The Treasurer explained the relatively large item of "house repairs" as being necessary to put the building in proper condition as regards outside and inside painting, repairing of roof, stacks, etc. He also called attention to the item covering the expense incident to this Society's membership in the New England Medical Council and expressed the opinion that the outlay was not justified by the benefit accrued to this Society by the membership in the New England Medical Council. Dr. MacLeod pointed out that the item covered not only the expenses of the delegates incident to their attending meetings at various parts of the New England States but also the share of the Rhode Island Medical Society in printing the report of the New England Medical Council. Dr. MacLeod felt that the Council does accomplish something of benefit to the Society which justifies the outlay.

It was voted to refer the Treasurer's report as read to the House of Delegates with recommendation that it be adopted.

Treasurer's Annual Report

EXPENDITURES

Collation and annual dinner expenses	$708.73
Expenses of Secretary (sec. hire)	75.00
Printing and postage	131.87
Gas	41.61
Electricity	84.58
Fuel	661.64
Telephone	100.97
City Water	9.34
House supplies and expenses	450.76
House repairs	1,149.55
Librarian	1,618.00
Janitor	625.00
Books and journals (Ely Fund)	77.40
Safe deposit	5.00
Treasurer's bond	25.00
Delegate to American Medical Assn.	100.00
Delegate to New England Medical Council	141.47
Insurance premium, 3 years	176.25
Liability insurance, 3 years	32.80
	$6,214.97
Cash on hand to balance	1,188.24
	$7,403.21

RECEIPTS

Cash on hand January 1, 1928	$2,255.03
Annual dues	4,040.00
Donations	633.03
Ely Fund	74.00
Harris Fund	356.62
Interest on daily balance	44.53
	$7,403.21

1928.				
Jan. 1.	Chase Wiggin Fund			
	By indebtedness to R. I. Medical Society	$6,892.21		
				$6,892.21

1929.				
Jan. 1.	Chase Wiggin Fund			
	To Loan Rhode Island Medical Society	$6,892.21		
				$6,892.21

1928.				
Jan. 1.	H. G. Miller Fund			
	By indebtedness to R. I. Medical Society	$5,359.10		
	Interest	250.00		
				$5,609.10

1929.				
Jan. 1.	H. G. Miller Fund			
	To Loan Rhode Island Medical Society	$5,359.10		
	Income H. G. Miller Room	250.00		
				$5,609.10

1928.			
Jan. 1.	J. W. C. Ely Fund		
	1 Bond So. California Edison Co.	$980.00	
	Interest on same	50.00	
	8 Shares Mechanics Nat. Bank Stock	480.00	
	Interest on same	24.00	
			$1,534.00

1929.			
Jan. 1.	J. W. C. Ely Fund		
	1 Bond So. California Edison Co.	$980.00	
	8 Shares Mechanics Nat. Stock	480.00	
	Paid R. I. Medical Society (for JOURNALS)	74.00	
			$1,534.00

1928.			
Jan. 1.	Endowment Fund		
	2,000 Oklahoma Gas & Elec. Co. 1st Mtg. 5%	$1,920.00	
	Interest on same	100.00	
	Cash on hand	1,449.26	
	Bank interest	68.57	
			$3,537.83

1929.			
Jan. 1.	Endowment Fund		
	Cash on hand	$1,617.83	
	Oklahoma Gas & Electric Co.	1,920.00	
			$3,537.83

1928.			
Jan. 1.	Printing Fund		
	By indebtedness to R. I. Medical Society	$1,677.52	
			$1,677.52

1929.			
Jan. 1.	Printing Fund		
	To Loan Rhode Island Medical Society	$1,677.52	
			$1,677.52

1928.			
Jan. 1.	E. M. Harris Fund		
March 6.	Sold Iowa Power & Light Co. 5½%	$2,103.28	
	Accrued Int. Nov. 1, 1927, to March 8, 1928	38.81	
		$2,142.09	
March 6.	Purchased Mtg. Security Corp. of Amer. 5½%	$2,000.00	
	Accrued Int. Jan. 1, 1928, to March 8, 1928	20.47	
	Balance from sale and purchase of bonds	121.62	
		$2,142.09	
	1,000 Pacific Gas & Electric Co. 6%	$1,000.00	
	Interest on same	60.00	
	2,000 Southern Illinois L. & P. Co. 1st Mtg. 6%	2,000.00	
	Interest on same	120.00	
	2,000 Mtg. Security Corp. of Amer. 5½%	2,000.00	
	Interest on same	55.00	
	Balance from sale and purchase of bonds	121.62	
			$5,356.62

1929.			
Jan. 1.	E. M. Harris Fund		
	1,000 Pacific Gas & Electric Co.	$1,000.00	
	2,000 Southern Illinois L. & P. Co.	2,000.00	
	2,000 Mtg. Security Corp. of Amer.	2,000.00	
	Paid R. I. Medical Society for repairs on building	356.62	
			$5,356.62

1928.			
Jan. 1.	Frank L. Day Fund		
	3,000 Canadian National Railway Co. 4%	$2,979.75	
	Interest on same	135.00	
	Balance from purchase of bonds	20.25	
			$3,135.00

1929.			
Jan. 1.	Frank L. Day Fund		
	Canadian National Railway Co.	$2,979.75	
	Interest used for purchase of books	61.00	
	Cash on hand	94.25	
			$3,135.00

1928.			
Jan. 1.	Herbert Terry Fund		
July 5.	Received from F. R. & C. H. Kenyon	$2,000.00	
July 6.	Purchased Missouri Public Service Co. 5%	$1,960.00	
	Accrued Int. Feb. 1, 1928, to July 6, 1928	43.10	
		$2,003.10	
	2,000 Missouri Public Service Co.	$2,003.10	
	Interest on same	50.00	
			$2,053.10

1929.			
Jan. 1.	Herbert Terry Fund		
	2,000 Missouri Public Service Co.	$2,003.10	
	Cash on hand	50.00	
			$2,053.10

Examined and found correct,
May 22, 1929.

GEORGE R. BARDEN, M.D.,
MURRAY S. DANFORTH, M.D.

The Treasurer further reported two members in arrears for non-payment of dues who have received customary notices without meeting their obligations, and it was voted that the following members be dropped: Dr. H. Barton Bryer, Dr. Max B. Gomberg.

Adjourned.

J. W. Leech,
Secretary.

HOUSE OF DELEGATES

The annual meeting of the House of Delegates was called to order at 5 P. M., May 23, 1929, at the Medical Library, by the President, Dr. A. H. Harrington.

The first item of business under the by-laws was the election of officers and committees for the year 1929-1930.

President, Dr. Frank T. Fulton, Providence
1st Vice-Pres., Dr. Julian A. Chase, Pawtucket
2nd Vice-Pres., Dr. Harry Lee Barnes, Wallum Lake
Treasurer, Dr. Jesse E. Mowry, Providence
Secretary, Dr. J. W. Leech, Providence

Committee on Arrangements

Dr. Isaac Gerber, Chairman, Providence; Dr. B. H. Buxton, Providence; Dr. Philip Batchelder, Providence; Treasurer *ex officio.*

Committee on Legislation, State and National

Dr. H. E. Harris, Chairman, Providence; Dr. C. H. Holt, Pawtucket; Dr. C. F. Gormly, Providence; President and Secretary *ex officiis.*

Committee on Library

Dr. John E. Donley, Chairman, Providence; Dr. Guy W. Wells, Providence; Dr. John P. Jones, Wakefield.

Committee on Publication

Dr. F. N. Brown, Chairman, Providence; Dr. C. W. Skelton, Providence; Dr. Norman S. Garrison, Woonsocket; President and Secretary *ex officiis.*

Committee on Education

Dr. C. C. Dustin, Chairman, Providence; Dr. P. P. Chase, Providence; Dr. Robert T. Henry, Pawtucket; President and Secretary *ex officiis.*

Committee on Necrology

Dr. T. J. McLaughlin, Chairman, Woonsocket; Dr. Earl J. Mathewson, Pawtucket; Dr. Harry C. Messinger, Providence.

Curator

Dr. C. D. Sawyer, Providence.

Auditors

Dr. Henry W. Hopkins for 2 years; Dr. Murray S. Danforth has 1 year to serve.

Member New England Medical Council

Dr. A. H. Harrington for 3 years; Dr. Norman MacLeod has 2 years to serve; Dr. H. G. Partridge has 1 year to serve.

Delegate to A. M. A. for Two Years

Dr. Roland Hammond, Providence.

Alternate Delegate to A. M. A. for Two Years

Dr. Pearl Williams, Providence.

The annual report of the Secretary was then read, and the same was accepted and placed on file.

The suggestion in the Secretary's report relative to making the Davenport Library more available for the use of the members was discussed and it was voted that the Library Committee endeavor to work out a method of loaning the books and to report on the same to the House of Delegates.

ANNUAL MEETING

The 118th annual meeting of the Rhode Island Medical Society was held at the Medical Library, Providence, R. I., on June 6th, 1929. The meeting was called to order at 10:30 by the President, Dr. Arthur H. Harrington.

The minutes of the March meeting and the annual meetings of the Council and the House of Delegates were read by the Secretary and approved.

Delegates from the State Medical Societies having presented their credentials which were found satisfactory were recognized by the President.

Dr. Thomas H. McCarthy of Brockton, Mass., President of the Plymouth District Society, brought the greetings of the Massachusetts Medical Society to our Society. In his remarks Dr. McCarthy urged the adoption by the Rhode Island Medical Society of the New England Medical Journal, formerly the Boston Medical and Surgical Journal, as the official organ of this Society in consonance with the other New England State Medical Societies.

Dr. Geo. H. Campbell of Augusta, Me., represented the Maine Medical Society and brought the

good wishes of his society to us. Also, he extended a cordial invitation to all our Fellows to attend the Maine Medical Society annual meeting.

Dr. John G. W. Knowlton of Exeter, N. H., represented the New Hampshire Medical Society and brought the greetings of that society to us for our annual meeting.

A telegram regretting that he would be unable to attend the meeting was received from Dr. Alfred C. Henderson, Stamford, Conn.

The report of the Fiske Fund was presented by the Secretary of the Fiske Fund Trustees, Dr. Wilfred Pickles, and will be found in the Reports of Committees.

It was voted that the report of the Fiske Fund be accepted and placed on file.

Dr. Wm. P. Davis, Chairman of the Committee on Necrology, presented a report on the following deceased members:

Dr. A. B. Briggs, June 5, 1928
Dr. Meyer A. Persky, Aug. 31, 1928
Dr. James Raymond Morgan, Sept. 25, 1928
Dr. Harry Winfield Smith, Dec. 24, 1928
Dr. Ransom H. Sartwell, Jan. 11, 1929

Dr. Davis also made recognition of the death of Dr. James H. Davenport who died Oct. 15, 1928.

The President requested the members to stand in silence in respect for the members who had passed away since the last annual meeting.

The following papers were then presented:

1. "Chronic Non-Seasonal Asthma," C. C. Dustin, M.D., Providence. Discussions by Doctors Dimmitt, Batchelder, Burgess, Barnes and Dustin.

2. "The Significance of Hemolytic Streptococcus in Throats of Hospital Patients," D. L. Richardson, M.D., Providence, and Mr. Edwin Knights, Staff of City Hospital, Providence. Discussions by Doctors H. P. B. Jordan, Chapin, Kramer, Brackett and Sundin.

3. "Common Fractures of the Elbow," M. S. Danforth, M.D., Providence. Discussions by Doctors Hammond, Ridlon and Sundin.

At 1:20 the meeting recessed for luncheon which was served in the Medical Library Building.

At 2:15 the President called the meeting to order for the afternoon session and the following papers were presented:

1. "The Use of Lipiodol in Neuro-Orthopedic Surgery," Henry McCusker, M.D., Providence. Discussions by Doctors Donley, Kelly and McCusker.

2. "Studies in Pneumoencephalography." The paper was read by Dr. D. H. Howes, Medical Staff of the State Hospital of Mental Diseases, Howard. X-ray illustrations were demonstrated by Dr. F. J. Farnell and Dr. Jesse B. Hudson of the Medical Staff of the State Hospital of Mental Diseases. Discussions by Doctors Gerber, Sundin and Kelly.

Recess of five minutes was then taken.

The third item of the afternoon session was "Cinematograph Demonstration of the Behavior of Living Tissue Cells in Vitro and the Effect of Radium Emanation Upon Normal Cells and Cancer Cells." Films by R. G. Canti and furnished by the American Society for the Control of Cancer. Before the pictures were shown Dr. Pitts discussed the work of the English workers who had done this investigation and Dr. Clarke of the Rhode Island Hospital explained the technique of taking the pictures, etc.

The President, Dr. Arthur H. Harrington, then read the annual address of the President.

Dr. Frank T. Fulton, the newly elected President of the Society, was conducted to the platform by Dr. Julian A. Chase and Dr. Harry L. Barnes, and inducted into office.

Dr. C. W. Skelton, on behalf of Mrs. Gardner T. Swarts, presented a beautiful wall clock to the Society as a memorial of her late husband, Dr. Gardner T. Swarts, Past-President of the Rhode Island Medical Society.

Dr. Fulton appointed Dr. Wm. R. White and Dr. Geo. S. Mathews a committee to draw up a suitable expression of the thanks of the Society to Mrs. Swarts for her generosity.

The President then adjourned the meeting to reassemble in the Biltmore Hotel for the annual dinner.

The anniversary chairman was Dr. Walter L. Munro who recalled that 30 years ago this date he had occupied a similar position at the annual meeting of the Society. He then introduced the speaker of the evening, his brother, Dana C. Munro, L.H.D., Dodge Professor of Mediaeval History, Princeton University, who spoke delightfully and entertainingly upon the medical aspects of the Crusades.

Adjourned.

J. W. Leech, M.D.,
Secretary.

SECRETARY'S REPORT

I beg leave to submit herewith the annual report of the Secretary upon the conditions and activities of the Rhode Island Medical Society for the year 1928-1929.

The Council and the House of Delegates have met in regular meetings and there has been one special meeting of the House of Delegates to consider the proposed amendment to the Workman's Compensation Act introduced into the state legislature. This amendment made certain changes in the existing Act but met with the disapproval of the House Delegates in that it failed to provide for the injured employee having the choice of physician treating his injuries. Your Committee on Legislation, State and National, will report in detail concerning its activities in this and other legislative matters. Suffice it to say that the amendment referred to above was not acted upon by the state legislature.

The September meeting of the Society was held at the State Sanatorium at Wallum Lake upon the invitation of the Board of Trustees and administrative officers of that institution.

The membership roll of the Society to date comprises 430 active, 27 non-resident and 8 honorary members.

The following members have died: Dr. Alexander B. Briggs, Ashaway, R. I., June 5, 1928; Dr. Meyer A. Persky, Providence, R. I., August 31, 1928; Dr. James R. Morgan, Providence, R. I., September 25, 1928; Dr. Harry W. Smith, North Scituate, R. I., December 24, 1928; Dr. Ransom H. Sartwell, Howard, R. I., January 11, 1929. In this connection I would call your attention to the death of Dr. James H. Davenport of Providence, a former Fellow of this Society. Throughout most of the active professional years of his life he maintained his active membership in the Society but as he withdrew in the later years of his life from professional work he discontinued active membership in the Society although he retained a keen and sympathetic interest in all its doings. This interest which Dr. Davenport retained for the State Society was splendidly manifested before his death by his selecting the Rhode Island Medical Society as the custodian and owner of his extensive library of essays, pamphlets, novels, poems, etc., written by medical men. This unique library will remain as a notable memorial to Dr. Davenport.

At this time I would recommend that the Delegates give serious consideration of the adoption of some method whereby Dr. Davenport's library may be made available to the Fellows in accordance with the character of the library. As matters now stand none of these books may be removed from the library. This restriction, it seems to me, almost nullifies its value to the Fellows. The very character of the library is such that for one to get the value of it the books should be available for use during one's leisure hours at home rather than to be confined to the limited hours which one could spend in this sort of reading within the confines of this building. Surely some method of loaning these books can be devised which will make them more available and useful to the Fellows and at the same time safeguard them as was the desire of their generous donor.

During the past year there has sprung up in Providence an organization known as the National Better Health Bureau, Inc., with the avowed purpose of making physical examinations and treating clients who purchase a so-called "health policy." Investigation by the House of Delegates has shown this organization to be essentially a commercial project with no outstanding medical feature to recommend it. This House will doubtless note with satisfaction the action of one of its component societies, the Providence Medical Association, in refusing to receive a paper scheduled to be read before it by a representative of this Bureau.

During the present administration there has been inaugurated a system of "Group Insurance" under the aegis of the State Society whereby insurance for all the members against malpractice suits, etc., may be obtained at reduced prices and with the added value which will come from the Rhode Island Medical Society acting more or less in the role of sponsor for the protection. The Fellows are urged to avail themselves of this opportunity of insuring themselves against malpractice and to co-operate with the Committee by prompt response to their announcement.

Respectfully submitted,

J. W. Leech, M.D.,

Secretary.

The report of the Committee on Arrangements was read, accepted and placed on file.

Report of the Committee on Arrangements

The Committee on Arrangements has provided the usual collations at the quarterly meetings of the Society. The annual meeting was held on June 6th, with a luncheon served at the Medical Library Building, and the annual banquet was held at the Biltmore Hotel in the evening. As usual, members whose dues are paid up were entitled to a ticket to the banquet without further charge.

Respectfully submitted,
Wilfred Pickles,
Isaac Gerber,
Bertram H. Buxton,
Committee on Arrangments.

Report of the Committee on Library

The Librarian presented a statement concerning the library for the Committee on Library:

"During the year 282 volumes were added to the library: 161 books were gifts, 8 purchased, and 113 were bound by money given for that purpose by the Providence Medical Association.

"There are 101 medical journals currently received and these are used largely in the reference work. The quarterly cumulative index makes it possible to find articles in the journals on most subjects.

"The Herbert Terry Fund was given in July, 1928, the interest to be used for 'the purchase of books and periodicals and for the binding of the same for the library.' The income from this fund will amount to about one hundred dollars a year.

"Some duplicate journals were sold to a New York dealer from lists sent on and we in return were able to complete a few files of periodicals for binding.

"Among the gifts which will be frequently used are eleven volumes of the Mayo Clinic, which will prove a valuable addition to the Library."

Report of the Committee on Publication

During the year 1928 there were no noteworthy features in the publication of the Rhode Island Medical Journal that would distinguish it from previous years. There were no outstanding events. Upon Jan. 1st, 1929, we had in the bank $995.64

During the year we received from all sources	3,998.08
Making a total of	$4,993.72
Our year's expenses were	3,884.84
Leaving a balance of	$1,108.88

Or a total gain for the year of $113.24 as per report rendered by our Business Manager.

Respectfully submitted,
Frederick N. Brown,
Chairman.

Dr. MacLeod called attention to the need at times of a printed list of the Fellows of the Society and suggested that such a list be published each year in the Rhode Island Medical Journal. Dr. Brown, editor of the Journal, suggested that a history of the Society with a roster of the Fellows would contain valuable data for reference but Dr. MacLeod pointed out that unless the list of Fellows was kept up to date each year it was of little value for the purpose which he desired. It was voted that the matter be referred to the Committee on Publication with the statement that the House of Delegates approves the annual publishing of the membership list of the Society.

Report of the Board of Trustees of Library Building

Your Board respectfully reports that but one formal meeting has been held during the year. This meeting was to consider the substitution of the finer grades of anthracite coal, to be used with an electric air blower, in place of the furnace size coal in use. The object sought by the change was economy. The majority of the Trustees, however, in their wisdom, deemed the change inexpedient under the conditions in our building.

During the year the outside of the building has been painted with one coat of paint, this at a cost of $463.50.

The vestibule, and one room in the janitor's apartment also have been repainted, and recently slight repairs have been necessary to the roof. Otherwise the building seems to be in fair condition.

Following a suggestion by Col. Anthony Dyer, that the oil portraits we have needed attention to preserve them in good condition, The Tilden-Thurber Corporation were employed for the work.

There is need for replacement of the linoleum floor covering in the reading room. It probably was not properly cured when first laid, and now not only looks badly but cannot be properly washed and dried, because of the universal indentations. The center, under the carpet, need not necessarily be replaced.

The tables and chairs in the same room need refinishing and some repairs.

Respectfully presented by

JULIAN A. CHASE,
Chairman.

REPORT OF COMMITTEE ON THE NEW MEDICAL LIBRARY BUILDING

The Committee had a meeting on August 13, 1928. The question at issue was whether it was advisable to take some active steps to see whether or not the present Library Building and its site would be of any particular value for some other purpose, and also to see whether some more satisfactory site for a building might be available.

The general tenor of the discussion was that the present situation would not justify any such activities on the part of the Committee. Instead of that it was proposed that suggestions be made to the Board of Trustees that some minor changes be made in the present audience room and the Chairman of this Committee was asked to convey this suggestion to the Chairman of the Board of Trustees, which he did.

A letter was received from Dr. Louisa Paine Tingley suggesting that the Eloise on Franklin Street would be a very satisfactory building. This, however, did not meet the approval of any of the Committee and she was notified to that effect.

Committee:

DR. FRANK T. FULTON, *Chairman*
DR. J. M. PETERS
DR. J. E. MOWRY
DR. GEO. H. CROOKER
DR. HALSEY DEWOLF
DR. E. S. BRACKETT

In accordance with the request of the Committee on New Medical Library Building it was voted that the report be accepted and placed on file, and the Committee be discharged.

Report of the Board of Trustees of the Library Building was read, accepted and placed on file.

REPORT OF COMMITTEE ON GROUP INSURANCE AND DEFENSE COMMITTEE

The report of your Committee at the March meeting was adopted, accepting the insurance arrangement offered by the U. S. Fidelity and Guaranty Co.

Your Committee has since then, in co-operation with the insurance people issued a circular letter covering the conditions and desirabilites of the arranged insurance. A copy of this circular which was mailed to all Fellows of the Society is hereto attached.

The recommendation of your Committee relative to the appointment of a standing "Defense Committee" awaits the appointment of members from the district societies by the President.

Submitted,

JULIAN A. CHASE,
Chairman.

(Circular Letter)

"Several months ago a special committee of the Rhode Island Medical Society was appointed to consider the matter of group liability insurance for the Fellows of the Society. This Committee made a careful investigation of the subject from all angles and made a recent report to the House of Delegates, which report was later adopted at the March meeting of the Society.

"The Committee believes that substantial benefits will accrue to the Fellows from group insurance, not the least being a saving of 20% over the present premium for individual policies. After due consideration the Committee has selected the U. S. Fidelity and Guaranty Company, whose Rhode Island agent is Mr. James E. Smith, No. 236 Grosvenor Building, Providence, R. I. Their adjuster in Rhode Island is Mr. McCarthy, a man of much experience in this work, and their attorneys are the firm of Huddy and Moulton. They agree never to settle a case except with the consent of the physician, and agree to fight any claim if the physician requests it.

"Their premium for insurance covering the standard limits of $5,000-$15,000 is $20 per annum. Double limits of liability ($10,000-$30,000) would cost 33⅓% additional, and limits of $15,000-$45,000 50% additional. The first named figure in each case is the limit of liability to any ONE person and the latter the limit for ALL accidents during the policy year. Considering that

double limits, viz. $10,000-$30,000 can be obtained for only one-third additional premium, we urge that you give consideration to this especially as jury verdicts are much larger now than in other days. X-ray and radium members are insured at 50% additional.

"To procure this group policy it was necessary to guarantee that at least 200 Fellows would avail themselves of it. In the questionnaire sent out by the Committee to the Fellows 270 agreed to come in under this group form. We feel that other Fellows will appreciate the opportunity to secure protection under the group plan with all its benefits. The group policy becomes effective as of a common date and thereafter as your present policy expires you may immediately come under the group.

"The Committee has recommended that the Society appoint a Defense Committee of five members, one from each medical district in the state, whose function will be to confer with members against whom malpractice charges have been brought together with the insurance company and its legal representatives. The member of the Defense Committee would fully investigate the case and act as medical advisor to the attorneys and defendant, assisting in every way possible. He could see the physicians concerned and talking over the matter as a mediator, might in certain cases head off court action. If there should be real liability his efforts would frequently result in a fair settlement, and if there were no just liability there would be no attempt at settlement and a stronger defense position obtained.

"The fact that a member of the Rhode Island Medical Society's Defense Committee was working in a case, would be somewhat deterrent to the class of attorneys who frequently press cases to trial, not on the merits of the case but for the purpose of getting fees. There are other advantages in having such a committee which will undoubtedly occur to all members.

"Kindly therefore fill out the enclosed application returning at once in the within envelope and being sure to notify us of the *expiration date of your policy* in order that the group policy may become effective with the least possible delay.

"Julian A. Chase, M.D.,
Roland Hammond, M.D.,
R. Morton Smith, M.D.,
"Committee."

The report of the Committee was accepted and placed on file.

It was voted that each District Society be requested to recommend to the President of the Rhode Island Medical Society a member of such District Society as a member of the Defense Committee, this nominee to be elected by the Rhode Island Medical Society to the Defense Committee, and that until such recommendations have been received by the President of the Rhode Island Medical Society that the latter officer be empowered to appoint as an interim member of the Defense Committee the President of the District Societies.

A report of the Council meeting held just preceding this meeting was presented by the Secretary.

It was voted that the House of Delegates accept and place on file the Treasurer's report as approved by the Council.

It was also voted to approve the Council's recommendation that the following members be dropped for non-payment of dues: H. Barton Bryer, Max B. Gomberg.

The Secretary called attention to the fact that the duly elected Delegate, and Alternate Delegate to the A. M. A. for the coming meeting of the A. M. A. are unable to attend, and it was voted to authorize the President to appoint an alternate delegate to represent this Society in the House of Delegates of the A. M. A. at Portland, Ore.

A letter from the Woman's Auxiliary of the A. M. A. urging the formation of a State Branch in Rhode Island was read by the Secretary. It was voted that the matter be tabled.

It was voted that the dues for membership for the ensuing year be fixed at $10.00.

The Secretary reported that a negative and print of the late Dr. James H. Davenport in a characteristic position in his library had been received through the courtesy of Mr. Walter Ball, Sunday Editor of the *Providence Journal,* and it was voted that the President be authorized to have an enlarged copy of the picture made, suitably framed and hung in the Miller Room.

Adjourned.

J. W. Leech,
Secretary.

(Further reports of Committees will be found in a later issue.)

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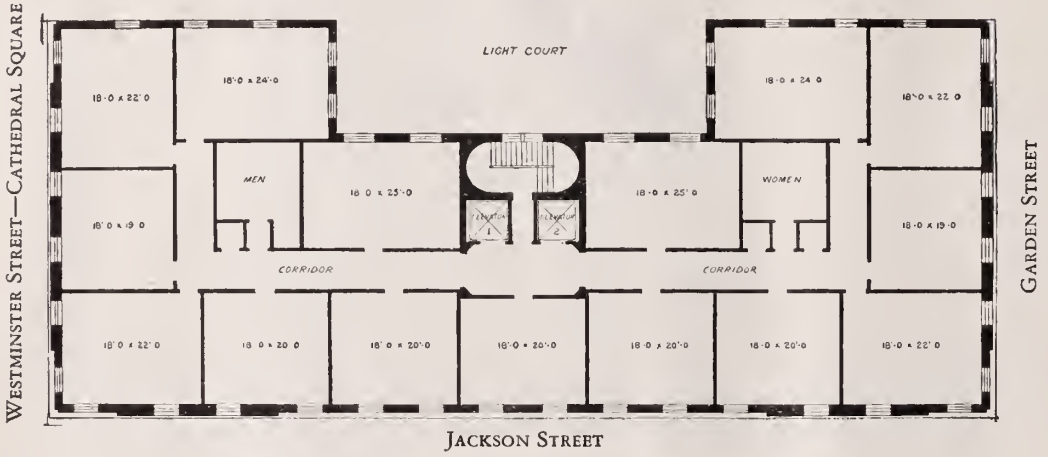
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These symptoms, observed by Hoobler in his recent studies of Vitamin B deficiency in infants, are

1. Anorexia
2. Loss of weight
3. Spasticity of arms and legs
4. Rigidity of neck
5. Restlessness and fretfulness

Hoobler cites that the usual dietary of an infant in this country up to its third month is human milk or cow's milk, with the addition of sugar, possibly a milled cereal, orange juice and cod-liver oil.

On analysis, Vitamins A, C and D are found to be present in this diet. But only minimal and, in many cases, subminimal amounts of Vitamin B are to be found.

With the addition of Vitamin B to the diet Hoobler noted that after two weeks the infant had changed from a thin, pale, spastic, restless, whining child, refusing part of its food, to a happy, rosy cheeked, smiling baby whose appetite seemed never to be completely satisfied and whose gain in weight was remarkable.

He concludes, therefore, that "every infant should have an addition of Vitamin B to its diet and should not depend on milk, either human or cow's, as its only source of this vitamin."

The question naturally arises then, what shall be the source of supply of Vitamin B for the infant?

E. R. Squibb & Sons have answered this problem in the development of a new milk modifier which is exceedingly rich, not only in Vitamin B, but also in assimilable iron salts—*Vitavose*.

Squibb's Vitavose is a palatable and highly nutritious maltose-dextrin preparation, made from fat-free, malted wheat germs. In addition to maltose and dextrins, it contains the water-soluble extractives from the wheat embryo—Vitamin B, soluble nitrogenous compounds and mineral salts.

Vitavose resembles a fine golden yellow sugar in appearance. It has an agreeable malty taste. It is physiologically assayed for its vitamin content and tests show that it contains 100 times as much of the anti-neuritic factors as does fresh, raw, certified cow's milk, and about 30 times as much of the pellagra-preventing factor.

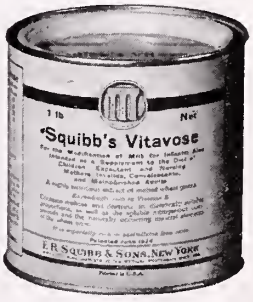
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Macy, Hoobler, Harris and others have published data which indicate that a very considerable number of people are subsisting on diets which are far from optimum with respect to Vitamin B.

This deficiency of Vitamin B is more profound during periods of marked physiological crisis such as pregnancy, lactation, rapid growth and convalescence.

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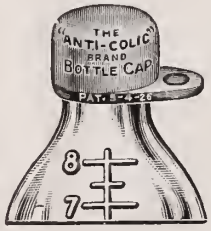
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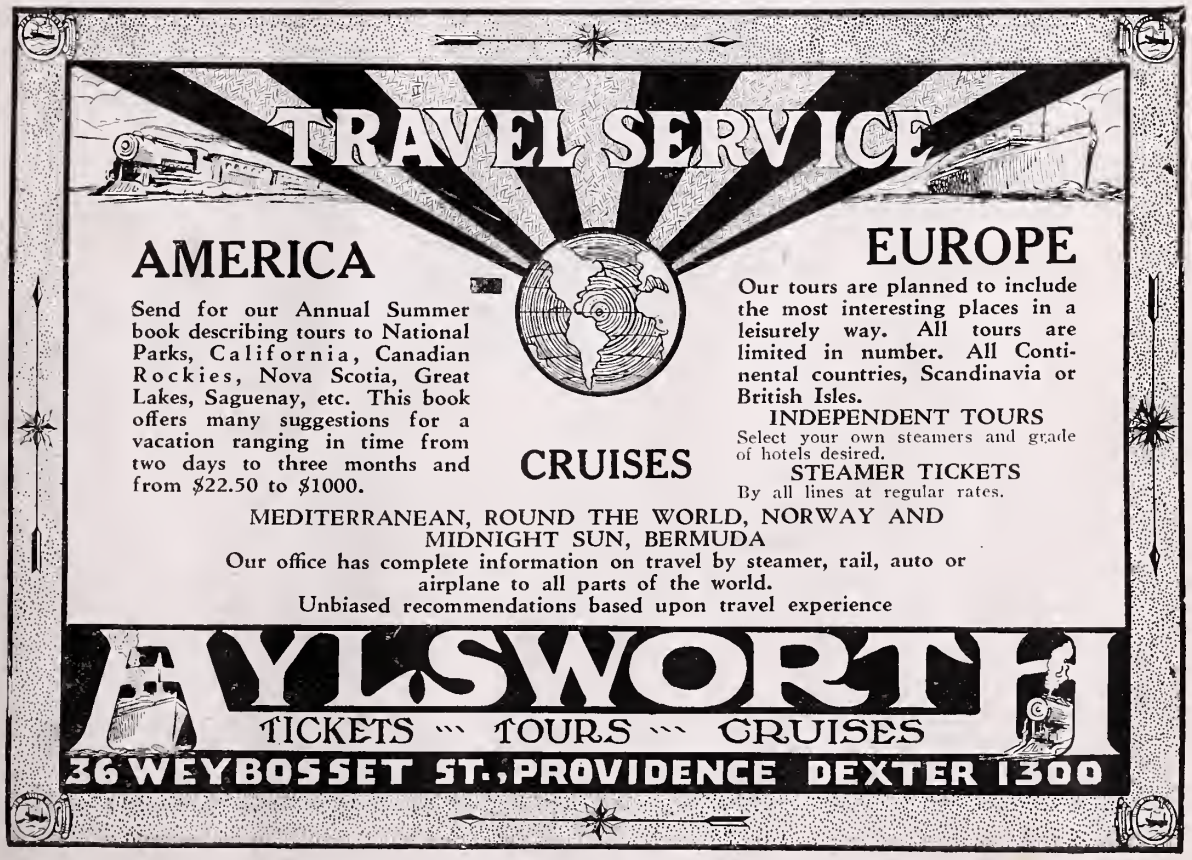
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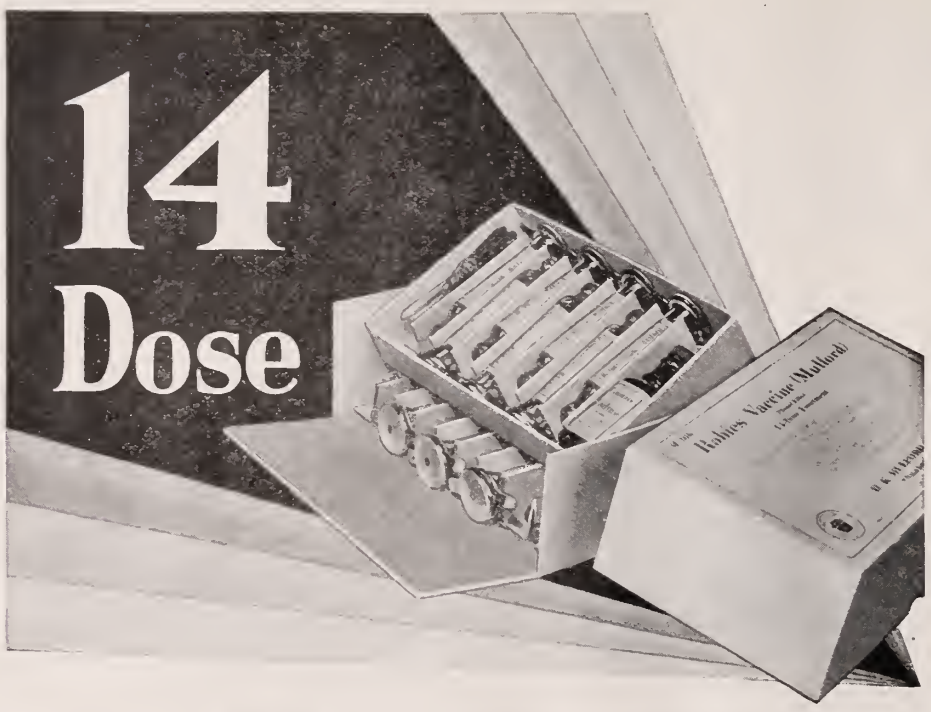
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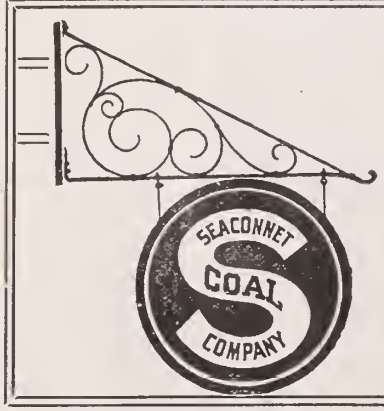
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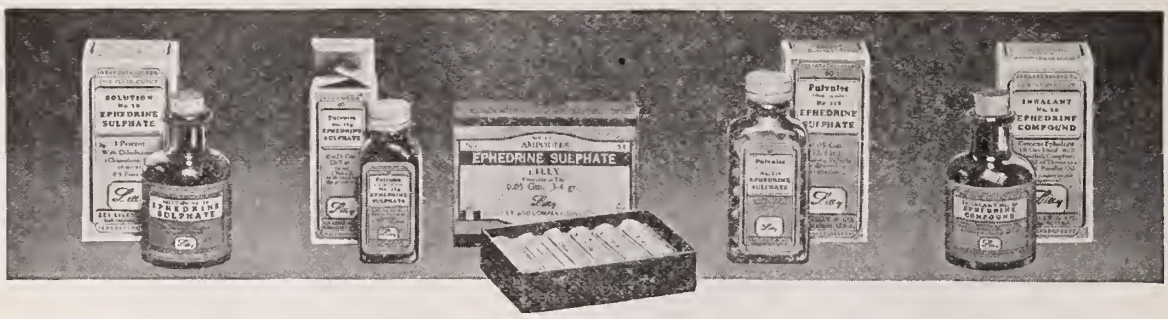
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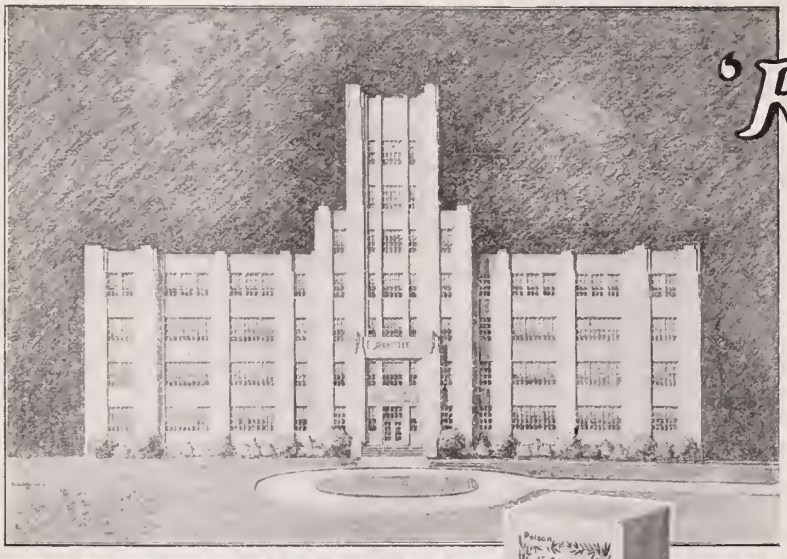
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ORIGINAL ARTICLES

THE MASSACHUSETTS CANCER PROGRAM*

HERBERT L. LOMBARD, M.D.
BOSTON, MASS.
CHIEF OF CANCER SECTION, MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

The Massachusetts Cancer Program was instigated not by the medical profession, not by the Department of Public Health, not by the American Society for the Control of Cancer, but by the general public who, sensing the suffering of cancer patients and the increasing death rate from this disease, forced legislative action. The plans which were considered for improving the situation were varied and included a large central cancer hospital, several smaller hospitals to be built in various sections of the State, free distribution of radium emanations to all doctors, and cancer clinics.

Before embarking on any program which would require the expenditure of large sums of money, the legislature deemed it expedient to authorize a study of the whole cancer situation by the Department of Public Health and the Department of Public Welfare. Four thousand dollars was appropriated by the State for this work and the Department of Vital Statistics of the Harvard School of Public Health assisted with money, supplies and personnel, making the total cost of the study slightly under $6,000.

During this study an attempt was made to answer the following questions:

1. How many cancer patients are alive on any one day in the State?
2. How many of these will need terminal hospitalization?
3. How long does the average patient wait before consulting a doctor?
4. Is cancer evenly distributed throughout the State?
5. Are operating facilities available for all patients?
6. Is radium and X-ray available for all patients?
7. Do quacks materially affect the cancer problem?
8. Is there need for further institutional care for cancer patients?
9. If so, what economic groups are involved and what types of cancer need institutionalization?
10. Are the facilities of a modern hospital needed or beds for custodial care only?
11. If extension of hospital service is needed, should it be under public or private management?
12. Should nursing homes care for any part of the cancer population?
13. Is more home care needed? For what types of cancer?
14. If more home care is advisable, should there be an extension of trained nursing service or attendance service under supervision?
15. Are cancer clinics needed? If so, should they be staffed by local medical men, or should the State furnish a travelling clinic?
16. Is further education of the public needed?
17. Is further education of the medical profession needed?

Data to answer these and other questions pertaining to cancer were collected in several ways. Questionnaires were sent to physicians, overseers of the poor, and hospitals. Personal surveys were made in all of the larger cities and a selected sample of the smaller communities. The original death records were studied and information regarding such items as the duration of the disease, its geographic distribution, and the age, sex, and nationality of the individuals having the disease, were obtained. Hospital records and those of the Harvard Cancer Commission were examined. Some of the findings of the survey were largely of local interest while others had a universal application.

In 1842 the cancer death rate in Massachusetts was 13 per 100,000; in 1860 the rate was 26; in 1900 it was 71; while in 1928 it was 129.8. That this increase is not all real is obvious. In the early

*Read before the Rhode Island Medical Society, March 7, 1929.

years, many deaths which were undoubtedly due to cancer were certified as senility, stomach trouble or unknown cause. Even at the present day, there is still confusion in diagnosis, and the rate of 129.8 is probably too low, but when allowance has been made for improvements in diagnosis and better certification, there still remains a definite increase in the cancer death rate. This increase in rate, present in both sexes, is greater among males than females. In the female group there has been a tendency for the curve of cancer death rate to flatten. This was so marked in 1926 that there were 300 less deaths than might have been expected from the study of the long-time trend.

In the years 1920 to 1925, Massachusetts had the highest cancer death rate of any state in the Union, when adjustments had been made for age and sex distributions. In this same period, New York was second, Rhode Island third, and Connecticut fourth, while many of the southern states had very low rates. The high cancer death rate in Massachusetts is probably due in a small extent to diagnosis and in a much larger extent to the high percentage of foreign extraction groups in the state. Deaths in New England are better certified than in the southern states and doubtless a greater percentage of cancer is found. About two-thirds of the population of Massachusetts is either foreign born or the children of foreign born and both of these groups have cancer death rates greatly exceeding those of native born of native parents.

The average person waits about seven months between the first symptoms noted and the first consultation with a physician. Boston citizens wait one-half month longer before submitting to an operation than do the residents of the state outside Boston. When we know that the chance of cure decreases as much as 16 per cent. per month in one type of cancer, it is apparent that long delay is the cause of many needless deaths. At the present time, in Massachusetts there are a sufficient number of hospital beds to care for all operative cases, but there is a need for more beds for terminal cases. The need is greatest in that section of the population that can pay $10 a week. With the present delay in seeking medical advice, the total number of terminal beds needed in Massachusetts is about 10 per cent of the number of yearly cancer deaths. If the seven months' delay can be appreciably reduced, the number of terminal cancer beds needed will likewise be reduced. Facilities for X-ray and radium treatment are not uniformly available throughout the Commonwealth.

The findings of the special report made by the joint departments were the basis for the subsequent legislation which authorized the maintenance of a hospital for cancer and the organization of cancer clinics. The present Massachusetts program is four-fold: hospitalization, clinic organization, education, and investigation. The various phases of this program have been developed by committees of representative citizens.

As Dr. Gerber is to speak on the hospitalization aspect, this paper will deal with the other three phases.

With the hospital as a nucleus the Department has established twelve cancer clinics which meet in seventeen cities and towns throughout the State. Probably two or three additional ones will be added to this list. During 1928, 2500 individuals came to the clinic, 29 per cent. having positive cancer. About one-half of the cancer patients were operable with a chance for cure, and about one-quarter of them had never seen a doctor. Newspapers brought 45 per cent. of the patients to the clinic and the doctors 29 per cent; but of the operable cancers with chance for cure, the doctors sent 50 per cent. and the newspapers 31 per cent. Cancers of the skin, mouth, and breast consituted three-quarters of all the cancers. These clinics are organized in the following manner:

An opportunity is asked to present the program to the organized medical profession of a given city. If it seems suitable, the local medical profession passes a vote of support to the program and authorizes the appointment of a local medical cancer committee. This committee is responsible for determining where the clinic or clinics shall be held, for outlining the policies, organizing the staff, supervising the quality of service, and directing the growth. The Department meets with this committee to determine how it can best assist with its resources in personnel, supplies, and funds.

The medical committee also appoints a local lay educational committee. This latter must determine such matters as education of the local public in regard to available resources and their proper utilization, and must face the unutterable, tragic, social and economic problems which will be uncovered, as well as decide the best solution of

home or hospital care for the incurable, since many will not want to die in a remote institution. The Department has personnel and other resources for these lay committees, but each community must be sufficiently stirred to the need of largely meeting its own problems. Too many sound programs have failed because of local indifference or antagonism.

Each clinic is required to furnish a social worker, who is appointed by and under the direction of the local committee. She attends all clinics, is responsible for all special records and reports, does the follow-up work and visits patients in their homes to see they are receiving proper treatment and care. She co-ordinates the clinic with other community social and welfare agencies, both local and state. In many cases, she diagnoses the social and financial status of the patients and plans for their further treatment or hospital care.

The minimum standard training for such a worker is graduation from a recognized school of social work, including a course in medical social service, or graduation from a recognized training school for nurses plus a course in public health nursing, or two years of general case work with a recognized social agency and a year's experience in medical social work.

The Department has a medical social worker whose duty is to co-ordinate the social work in the various clinics and to find means by which follow-up work may be carried on in the non-clinic communities. The policies of social service as it relates to cancer control will be further worked out by the Department with the aid of our advisory committee composed of leaders in the social and nursing field. Publicity will also be needed to disseminate facts regarding the possibilities of prevention and cure of cancer in its early stages.

In some localities the clinic is a single hospital, while in others the clinic has branches in several hospitals and meets at different times in each of them. While the staffs of the different branches vary, there is but one management and one social worker.

While the educational work centers around the lay committees in the clinic cities, the central office advises these groups, distributes literature, maintains a speakers' bureau, and furnishes members of its staff to offer such assistance as is needed. Lay committees are also being organized in some of the non-clinic communities.

A State Advisory Committee has been appointed to determine the best methods of publicity. Efforts are being made to get into closer touch with the local organizations and to interest them in both the State's program and the disease itself. In order to co-ordinate the work of the clinic, conferences are held at the Pondville Hospital at which local cancer committees and clinic chiefs, social workers and the lay committees, meet and discuss their various problems. Statistics are used to shed additional light on past events and not for the purpose of demonstrating anything. To help in this most difficult field of separating the truth from the untruth, the State Department of Public Health is making several studies into cancer epidemiology. During the past year we have made an intensive study of the death records, with special emphasis on the relationship between the various types of cancer and the nativity of the individuals. Death records have been obtained from Ireland and Italy to compare with those of the Irish and Italians in this country.

Although mortality figures and hospital records for cancer are available and have been freely studied, little is known regarding cancer morbidity in the community at large. Many individuals who have had cancer and have been cured are reticent regarding their condition and the exact number of cures is not known. Several studies have been made to ascertain the true cancer morbidity. The physicians of Newton have voluntarily reported their cancer cases and house-to-house surveys have been conducted in a residential town, a manufacturing city, and two rural communities.

The visiting nurses throughout Massachusetts are filling out questionnaires which give, in detail, information regarding the habits of the cancer patient. Each nurse obtains similar information from a non-cancerous patient, who acts as a control. When a sufficient number of questionnaires are obtained, any difference which may exist between the habits of the cancer patient and the non-cancerous individual can be noted, and the significance considered.

The cancer clinics throughout Massachusetts will furnish necessary information of a special character. When a patient presents himself to one of the state-aided cancer clinics, a few questions are asked of him regarding the symptoms and the

reason which induced him to come to the clinic. It is felt that the average patient presenting himself to a clinic should be questioned as little as possible owing to his emotional excitement. Incidentally, extensive questioning of patients might tend to decrease the attendance at the clinic. The few facts obtained however, will furnish valuable data on the social aspects of the disease, and the value of the various forms of educational publicity.

At present, the Massachusetts program seems satisfactory. It is furnishing care for a part of the cancer population, making adequate diagnosis available for all citizens of the Commonwealth, disseminating information regarding cancer to both physician and laity, and conducting studies relative to the prevalence, etiology, and curability of the disease. Our methods seem practical for Massachusetts. Whether or not they would be of value in other states is a question. The character of the population, the size of the state, the availability of hospitals, means of transportation, and many other items must be considered in working out a state program for cancer control.

This, then, is the Massachusetts Cancer Program; to estimate its effectiveness will be a problem for the future as the estimation of its needs has been a problem of the past.

TULAREMIA

(Case Report of)

By

Dr. Arthur G. Randall
Providence, R. I.

At the meeting of the A. M. A. held at Minneapolis June, 1928, Dr. Walter M. Simpson of Dayton, Ohio, closed his remarks before the section on practice of medicine as follows:

"This disease stands unique as the first truly American disease and the guiding spirit that has made this accomplishment possible is Edward Francis."

Doctor Simpson was speaking of Tularemia, the so-called rabbits disease and of the special and complete study made of it by Doctor Edward Francis, surgeon of the United States Public Health Service, Washington, D. C., and because of whose researches it has been called Francis' Disease.

This is an infectious disease caused by the bacterium tularense. It affects rabbits, hares and wild rodents. It may be transmitted to the human specie by the bite of an infected blood-sucking fly, by contamination of the hands or conjunctiva with the internal organs or body fluids of the infected animal.

McCoy and Chapin discovered the bacterium tularense and named it after Tulare County in California, where many squirrels were found diseased.

Up to December 28, 1928, thirty-nine states had reported one or more cases of tularenia. Washington, Wisconsin, Delaware, Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut had not reported any. The largest number, seventy-four, were from Ohio and the next largest, fifty-nine, were from Montana.

While the infection may be carried by a blood-sucking tick or fly, the great majority of cases come from the jack rabbit in the West and the ordinary cottontail and white rabbit or varying hare which we have in New England. The disease as you would expect is especially prevalent among market men, laboratory workers, farmers and their families and hunters. It is not contagious from one human being to another, one attack protects against a subsequent attack. The diseased flesh is not a source of contagion if cooked. In the presence of a certain history and certain symptoms a test known to pathologists as the Agglutination Test which is an agglutination of the bacterium tularense by the blood serum of the infected individual makes the diagnosis quite certain. This in a general way gives a resume of some of the facts and history of this disease and I take great pleasure and satisfaction in giving a report of the first case of tularemia ever reported from Rhode Island or any of the New England States as far as I know.

On May 7th, I was called to Allen T. living in a small three-roomed house in North Scituate, Rhode Island, one of a family of five or six occupying these premises some little distance in from the main road, close to the woods. He is nineteen years old, weighs about 160 lbs. and when well is a ruddy, robust, strong, typical country boy.

He had been feeling badly for two or three days. He had a small open wound at the base of the nail of his right forefinger. Fever was about

102. He had had a chill and was complaining of being cold when I visited him, although the room was suffocating from the heat of a fire in the kitchen stove. There was nothing abnormal in his chest. He complained of some soreness in the elbow and in the glands of the axilla which were enlarged. My impression was at the time, that he was a late case of the influenza epidemic. On the 10th of May he rode to my home in an automobile, still looking very badly, pale and weak. On the 16th, I visited him again at his house and on the 19th, 23rd and 25th he came to my house and on the last date he looked and said he felt much better. On the 23rd his father had told me of finding two dead rabbits near the house and two days before the boy was taken sick he had found a dead rabbit and torn it to pieces with his hands and given the meat to the family cat which died very soon after. It then flashed into my mind that this might be a case of tularemia and on the 25th, I took a test tube of blood and sent it to the State Laboratory and it was reported negative for typhoid and undulant fever, but through the courtesy of Dr. Rounds of the State Board of Health the blood was sent to Washington to the United States Bureau of Hygiene and it was there reported positive for tularemia. On the 27th of May, he called at my house looking very much better.

There is no special treatment for this disease except symtomatic. It will most likely be mistaken for influenza, septicemia, tuberculosis or typhoid. In reporting this, the first case in this section of the country, it would seem well to bear the possibility of running across it in our work, of warning hunters, farmers, market-men and laboratory workers to be careful in working on the flesh of hares and rabbits, to explain its non-contagious nature, man to man and that thoroughly cooking the meat makes it safe to eat.

HEARING EXERCISES FOR THE PARTIALLY DEAF.

By

L. L. Albert, M.D.
229 Valentine Lane,
Yonkers, N. Y.

Auditory perceptions, like those of other senses, in a large measure are dependent upon the individual auditory irritability or excitability. Auditory excitability can be increased by conscientious practice in the reception of auditory impulses. In other words, training or hearing exercises can improve one's hearing to a remarkable degree. The benefit of training, however, is usually in proportion to the intelligence of the particular patient.

The normal ear receives sound impressions over a varied scale zone. The diseased ear receives diminished sound impressions depending upon the degree of deafness. As the excitability of the auditory sense lessens, there is a corresponding increase in the deafness.

Methodical auditory exercises will tend to combat and conteract diminishing sound reception. The exercises should give the ear the greatest possible stimulation, arousing dormant attention and exciting the recognition of the various letters and syllables. The exercises are graduated and adapted for various degrees of acquired deafness. They may also be employed successfully in many cases of congenital deafness and in some cases of the deaf and dumb.

By methodical auditory exercises for these cases of hard of hearing, we refer to methodical instruction in distinguishing various sound and speech impressions. We must emphasize to the patient how important it is to concentrate his attention on various sound impulses received from street traffic, the human voice, musical instruments, etc. This combating of the usual inattentiveness to sound impressions will yield in itself very surprising improvements in hearing.

Patients who suffer from diminished hearing should seek frequent conversational intercourse, attend concerts and recitals, et cetera, in order to stimulate the hearing as much as possible. In practicing with speech sounds it is advisable not to raise the voice higher than that just audible to the patient. We should speak at some distance from, rather than close to, the patient's ear. Exercises should consist of short sentences, words, syllables, and various letters which the patient is to repeat. Mistakes are corrected by repetition. It is most difficult of all to distinguish between f and s and between b, d, and z. Exercises should be distinctly enunciated.

Exercises should be short on account of rapid fatigue, but should be repeated frequently during the day. It is less tiring to listen to sentences which have a stimulating effect. At the beginning,

speak slowly so that the patient may follow more easily. After a time, speaking should be more rapid until the rapidity of the ordinary conversation is attained. The patient should rest from the exercises when tired and relax periodically when at the theater or during a lecture.

Besides improving the hearing, the exercises also have an important psychological effect. By constantly seeking conversational and social contacts, the patients receive new impressions and new hopes. Otherwise, they tend to live in retirement and grow more and more morose and distrustful.

With deaf children, during the first years of life, repeated experiments should be made with musical sounds, especially those of the accordion. If the slightest evidences of hearing are manifested, daily exercises should be advised. From the third to the fourth year a child may be shown an object such as a tree, a house, etc., and at the same time the name of the object called into the child's ear in order to make plain if possible the acoustic impression pertaining to that object. Later on, auditory experiments with the vowels a, e, i, o, and u should follow.

Not understanding is often mistaken for not hearing. A thorough test may show that the patient hears the sounds but does not understand their meaning. In these cases it is necessary in advance to inform the apparently deaf person of the meaning of the test vowels or words so that if there is any trace of hearing present he understands the meaning of what he hears.

Musical sounds are very well adapted for auditory exercises in deaf mutes. As a rule, deaf mutes who do not hear even the loud and especially the high accordion notes will not show any particular improvement from hearing exercises. In schools for the deaf and dumb, where a limited time can be devoted to each pupil, only the best of the hard of hearing patients should be admitted to the auditory exercise classes. In private cases, it is recommended that hearing exercises be utilized where even a slight remnant of hearing remains.

Auditory exercises also have a considerable practical value as regards improvement in pronunciation and greater facility in social intercourse. Finally we must not underrate the psychic influence of the possibility of acoustic intercourse, though it be only partial.

DIAGNOSIS AND AMBULANT TREATMENT OF PEPTIC ULCER*

William E. Preble, M.D., Sc.D.

Introduction

Peptic ulcer is a common disease, and according to statistics, not infrequently diagnosed incorrectly. Bassler states that in 400,000 autopsies ulcer was diagnosed in less than one per cent. of the cases, while in 59,450 autopsies ulcer was found in 4.4 per cent. of the cases. This statement was made in 1917, and it is probable that with the improved methods of diagnosis the disparity between autopsy findings and correct diagnosis would not be so great.

Peptic ulcer was described by Celsus about 25 A. D. and in more detail by Cruveilhier in 1829. The first case of duodenal ulcer operated was by Codivilla in 1893, and the first successful operation for perforated ulcer was by Dean in 1894. In recent years the disease has been exhaustively and fully described by Moynihan, Codman, the Mayos, Sippy, Bassler, Smithies, Rehfuss, and others. In the present paper I intend to give only the main points in diagnosis and differential diagnosis, and describe in some detail the so-called ambulant treatment. The term peptic ulcer includes gastric, duodenal and jejunal ulcers—the latter almost always following operation for a gastric or duodenal ulcer. I am not including in the following remarks the acute ulcer which may accompany extensive burns, uremia, acute infections, and almost any general toxemia.

Diagnosis

The chronic peptic ulcer most always gives a history of several years of recurring attacks of "indigestion," and the early attacks are frequently relieved by slight changes in diet and the ingestion of alkalies. The pain in the well developed cases is quite characteristic. It comes on some time after the ingestion of food and is usually relieved by food or alkali. In the gastric ulcer, the period before the onset of the pain is shorter. According to Moynihan there is a very definite rhythmicity and periodicity. It is "food, comfort, pain, comfort." The pain usually appears in less than two hours after eating. With the duodenal ulcer the

*Read before the New Bedford Medical Society, January 14, 1929.

rhythmicity is "food, comfort, pain," the pain persisting until more food is taken. According to Eusterman, there is a history of pain off and on for ten or twelve years, and pain is a prominent symptom in 80 per cent of the cases. Gross hemorrhage at some time is a symptom in about 35 per cent. of the cases, and occult blood in about 25 per cent. It should be remembered, however, that in occasional cases gross hemorrhage is the first symptom. The X-ray is of great value as a diagnostic aid, giving correct evidence, according to Rehfuss, in 96 per cent. of the cases. While the stomach tube is undoubtedly of some value, I rarely use it in these later years, as the discomfort to the patient is so great, and the information derived from its use is so small, that I do not feel justified in using it as a routine measure. The stool should be examined in every case, chiefly to find out whether the ulcer is bleeding or not.

The symptoms of jejunal ulcer are those of duodenal ulcer. If a patient has had a gastroenterostomy, and there is a recurrence of symptoms in a few months or years, the probability is that a jejunal ulcer has formed. The X-ray will usually settle this point. Our main diagnostic points, then, are the long history, the characteristic rhythmicity and periodicity of the pain, the X-ray examination, and examination of the stool.

Differential Diagnosis

Peptic ulcer may usually be differentiated from cancer of the stomach by the character of the pain which, in cancer, is usually dull and nearly constant, and not relieved by food. There is almost always an accompanying anemia with a slightly increased white count, and loss of weight. The X-ray, of course, is almost invaluable here. With chronic cholecystitis, there is no particular relation between food and pain. There is apt to be jaundice at some time, although this is not always the case, and there may be the characteristic attacks of biliary colic. Chronic appendicitis may be mentioned although this is so rarely mistaken for a peptic ulcer, that I will not waste words on it. Angina pectoris and angina abdominals may be mistaken for peptic ulcer. The character of the pain in these two conditions is precordial or epigastric; is brought on by exertion, worse after meals, and relieved by rest. Lead poisoning, tabes and "nerves" should be mentioned, but careful study would usually differentiate these from peptic ulcer.

The perforating peptic ulcer must be differentiated from an early pneumonia with diaphragmatic pleurisy. More than one patient with this latter condition has been operated on with disastrous results. The pain with diaphraghmatic pleurisy is more severe, the abdomen is rigid, without much tenderness, and the high temperature, high pulse and high respiration are valuable signs in enabling us to make the correct diagnosis. In acute pancreatitis the pain is very severe but there is much more shock present and we rarely have the long history of "indigestion" that goes with peptic ulcer. Cardiac infarct may be differentiated by the sub-sternal character of the pain and the lack of abdominal rigidity, tenderness, etc. It rarely happens that perforation is the first symptom of peptic ulcer, but this is so rare that it can almost be disregarded.

Treatment—Surgical

Certain cases of peptic ulcer require surgical treatment. The main indications for surgery are first perforation. It is obvious that immediate operation is demanded on all these cases. Second, obstruction. This includes both obstruction at the pylorus and the so-called hour-glass stomach. It should be remembered, however, that in some of these cases in which the X-ray shows an apparent obstruction, that the trouble may be due to either spasm, or in some cases, to oedema of the tissues about the ulcer. The picture may change markedly after a few weeks medical treatment. Indeed, some of these cases with actual obstruction, in which surgical interference is contraindicated for one reason or another, do very well for long periods on medical treatment. The third indication for surgery is the recurring hemorrhage. By hemorrhage, I do not mean a little oozing, giving occult blood in the stools, but real hemorrhage either by mouth or rectum. The fourth class includes those cases that for one reason or another are persistently refractory to medical treatment. In some of these the trouble is adhesions, and in some a persistence of over-secretion of gastric juice. In some cases the trouble is due to the patient's temperament—he apparently has not the will power to follow the prescribed regime over a long period.

Treatment—Medical

Up to recent years the medical treatment of peptic ulcer was pretty well standardized. Various authorities outlined their particular forms of treatment, but they were all very much the same, with slight variation as to the exact kind of food given, and the quantity and kind of alkalies, but in general all patients were put to bed for a period of two to four weeks, with a preliminary starvation period of one to five days. Milk, cream, eggs, cereals, purees, etc., were given in varying quantities every one to two hours for the first two or three weeks, and gradually the patient was brought back to a diet including solid food. Practically all authorities advised the use of alkalies of some kind in rather large quantities. After this preliminary treatment, the patient was allowed to eat pretty much what he chose. Under this treatment the patient was laid off from work from four to eight weeks. One of our prominent Boston surgeons once remarked to me that it was better to operate all of these ulcer cases, particularly those in the laboring class, because they got back to work so much quicker than they did on medical treatment.

Ambulant Treatment

Since September, 1919, I have been treating practically all of these cases standing up—the so-called ambulant treatment. To the best of my knowledge, there was nothing in the literature about this mode of treatment until Alvarez in December, 1926, wrote a paper outlining this treatment in some detail, and quoted excellent results. Solid food is given to the patient from the start, and he keeps right on at work doing business as usual. My first case was an old man of 78 with apparently almost complete obstruction at the pylorus, and almost constant pain, but his physical condition was such that surgery seemed contraindicated, and he was too old and feeble to put to bed. I prescribed for him, really under protest, telling him that his was strictly a surgical case. To my surprise, he did perfectly well on a treatment along the lines I am going to indicate. I decided, as he got along all right, with entire cessation of symptoms, that perhaps it was not necessary to put all of these cases to bed and I have been treating them standing up ever since. The treatment is very simple. In the diet we avoid mechanical things that would irritate the ulcer such as too large meals, perhaps causing stretching of the ulcer, coarse food that cannot be chewed up almost to a paste, and very bulky foods. We also avoid chemical irritants such as condiments, smoked salted or pickled foods, and foods that have an excess of sweets or starches, and any highly seasoned food. This means that the patient may have fresh meat or fish of any kind, eggs, milk, cheese, cooked fruits and cooked soft vegetables, and light puddings such as custard, blanc mange, etc., without much sugar in them. Although most of the authorities prohibit tea, coffee, tobacco, and alcoholic beverages, I let all of my patients have these things in moderation, if they wish them. The patients are given three moderate sized meals (all about the same size) and a light lunch two and one-half hours after each meal daily. The lunch may be a glass of milk and a cracker, or a one inch cube of cheese, with a cracker or two, or, in some cases where it is difficult for the patient to get either of these, one-half dozen malted milk tablets. I give a magnesia and bismuth powder for the alkali, in sufficient quantity to keep the bowels working regularly. The patient is kept on this sort of a regime for at least six months, and usually a year. Authorities differ as to the length of time it takes for an ulcer to heal, but none of them give less than two and one-half monhs for the healing time and some of them state it takes as long as three or four years.

The contraindications for this treatment are, first, large hemorrhage in which case we put the patient to bed for a few days, perhaps a week, and then start the regime. Second, the occasional very much emaciated case when bed and forced feeding seem to be indicated. Third, the occasional refractory case that does not do well and is either put to bed, or referred to the surgeon. Most authorities advise the removal of infectious foci and this seems to me logical as many authorities think that peptic ulcers are primarily due to infection.

Series of Cases

I have checked up on 182 of my own cases in private practice. There were 115 males and 67 females, with 27 gastric and 155 duodenal ulcers. Of the gastric ulcer cases 9 were male and 18 female, while of the duodenal cases 106 were male and 49 female. Of the 182 cases 34 were operated on my advice, and 10 had been operated before I

saw them—a total of 44 operated, or 24.2 per cent. but taking out the 10 operated before I saw them, the figure is 19.7 per cent. But this needs still further revision as 6 were operated for something other than ulcer, so the correct figure is 28 of 172 cases operated because of ulcer, or 16.2 per cent. I think this figure is probably too high for recent years, as in my early years of practice I advised operation more frequently than at present. Of the above 36 operated because of ulcer, 8 had perforated when I first saw them, and two perforated later, making 10 operated for perforation or 5.4 per cent. 10 were operated because of obstruction, or 5.4 per cent. One was operated because of hemorrhage, or 0.5 per cent., and 17 were operated because of persistent symptoms, or 9.3 per cent. There were 4 post-operative deaths—one from peritonitis, 2 from hemorrhage, and 1 from pulmonary embolism, or an operative mortality of 9 per cent. Of the whole series, 135 were treated medically, including 12 treated before or after operation, and 35 were referred to their family physician or refused treatment. Of the 135, 23 were treated by the Sippy method, with one relapse and 2 perforations later. 112 were treated by the ambulant method, with 2 relapses (1.7 per cent.) and 1 perforation. This case that perforated was the old man whom I first treated by this method, who was supposed to have an almost complete obstruction but who lived four years in comfort, was operated in less than three hours after perforation, and died in twenty-four hours. I want to call attention again to my previous statement that patients do just as well, if not better, on the ambulant treatment, as on the bed treatment. My series is small, yet I feel that this statement is very well substantiated.

In conclusion, I want to call attention to the economic value to the patient of this mode of treatment. As I said above, on the old treatment he was laid off from work from four to eight weeks, he was seen nearly every day by the doctor, and a large amount of laboratory work was done, so the patient, when he got back to work, was faced with a large doctor's bill and perhaps a large hospital bill. Under the ambulant treatment, he does business as usual right along.

Summary

1. Peptic ulcer is a very common disease, frequently not diagnosed correctly.

2. Exhaustive descriptions of the disease in all its phases have been given by Moynihan, Codman, The Mayos, Sippy, Bassler, Smithies, Rehfuss and others.

3. The so-called ambulant treatment saves the patient large doctors' and hospital bills, and keeps him at work.

4. The results of this treatment are just as good as the results of the bed, starvation, and soft diet treatment.

EXCRETION OF LEAD

The studies described by Robert A. Kehoe and Frederick Thamann, Cincinnati (*Journal A. M. A.*, April 27, 1929), have demonstrated that lead is being excreted in both the urine and the feces of normal persons, quite apart from industrial exposure to lead compounds. They show further, that persons whose occupations involve some degree of contact with lead excrete somewhat larger quantities of lead as a general rule, while those for whom exposure to lead compounds constitutes a recognizable industrial hazard excrete still larger amounts. They selected: *(a)* Subjects with no occupational exposure to lead: Seventy-one medical students provided the subjects of this type. *(b)* Subjects with slight occupational exposure to lead: Seventy-two filling station handlers of commercial gasolines not containing lead (tetra-ethyl lead) were studied. *(c)* Subjects with a present exposure to recognized lead hazards: Ninety-seven subjects representing all the various degrees of dust exposure in two hazardous lead industries furnished the data for this portion of the study. A detailed and chronological occupational history was obtained on each subject. (A careful physical examination, urinalysis and blood examination were made, but these data are not considered in the discussion.) Not less than 2 liters of urine, and not less than a single large evacuation was requested of each subject. In analyzing the feces and urine they used certain modifications of the Fairhall method employed by them in 1926. They conclude that the appearance of lead in both the urine and the feces of students shows that some degree of lead absorption is "normal" for everybody.

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FREDERICK N. BROWN, M.D., *Editor*
309 Olney Street, Providence, R. I.

CREIGHTON W. SKELTON, M.D., *Business Manager*
166 Broad Street, Providence, R. I.

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Henry M. Boss, Jr., President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

THE BUGABOO OF STATE MEDICINE

Many years ago when Germany instituted a system of State Medicine, it was hailed by many of the socially minded citizens of this country as a great forward step. Later, when Great Britain decided to try the experiment, these same individuals were working on the details of the method to be used in this country.

Soon, however, it began to be clear that this new mechanistic method was not a panacea and that there were reports of failures. It destroyed the freedom of choice of the individual patients and in many cases it changed the physician into an automaton who doled out pills for people who were cases rather than individuals.

There is no question that there are distinct advantages in some form of state medicine. The organization of our federal, state and local authorities for the control and prevention of communicable diseases is an admirable example of the proper use of this method. Of course, there are dangers in delegating this authority to radicals who seek to stretch this power beyond the proper limits.

One of the questions that is agitating many medical societies and individual physicians is that of the free clinic. The Illinois State Medical Society has been stirred particularly by the service rendered by some of the hospitals and some of the groups in that State. It does not seem as if this question is one entirely of State medicine. As long as the cost of medical education remains so high and therefore the cost of medical care to the patient must be correspondingly high, so long there will have to be provided for those with inadequate incomes the proper medical care.

This country of ours has always been particular about the right of the individual. The encouragement of individual incentive has made our country great and will continue to keep us in the forefront of progress. But we must also remember that this individualism has its dangers. This has been expressed in the following quotation which has been published before, but can bear repetition.

"Individualism is vital to the welfare of the physician, it should be fostered and encouraged, but individualism which refuses to unite and to co-operate to bring about the greatest good for the greatest number may become a danger and a menace to the accomplishment of the great aims for which physicians have dedicated their lives, strength and high courage."

A HOSPITAL FOR CHILDREN WITH NERVOUS DISEASES

Under the will of Mr. and Mrs. George L. Bradley, who were life-long residents of this State, their residual estate was left to establish a memorial home for their daughter, Emma Pendleton Bradley. This residual estate has recently become available and for over a year the trustees of this memorial home, who were appointed by the Trust Committee of the Rhode Island Hospital Trust Company, in accordance with the will of Mr. and Mrs. Bradley, have been working upon plans. It has been decided to build a hospital with one hundred beds to take care of children suffering from nervous diseases, and the trustees are planning to make provision for five groups of children, namely, birth injuries of the nervous system, post-encephalitic nervous disorders, epilepsy, endocrine disorders and, lastly, other types of behavior problems. Cases will be very carefully selected, in order that the work shall not be purely custodial, and that there shall be a turnover active enough so that as many cases as possible can be cared for, and as many children as possible returned to the community benefited by the treatment of the hospital. Such a hospital will give to Providence and the State of Rhode Island a wonderful institution well equipped for the investigation and treatment of illness in children which, in the past, has altogether too often led to their becoming chronic invalids. In making plans for the hospital all that is best in hospital construction for children's hospitals has been studied, but, as there never has been such a memorial created, there have been really no precedents that could be definitely followed. The hospital will be provided with adequate laboratories for research, school rooms, and all forms of modern therapeutic apparatus. It is expected that the construction of this hospital will be started during the present year.

SOCIETIES

The Rhode Island Medical Society

Reports of Committees Continued

The report of the Committee on Legislation was read, accepted and placed on file.

Annual Report of the Legislative Committee of the Rhode Island Medical Society

Following is a resumé of the Health Legislation passed by our state legislature during its 1929 session.

Chapter 1419. Relating to narcotic drugs—this chapter replaces Chapter 1236 passed at the previous session and defines those who may be entitled to have in their possession hypodermic syringes or any instrument adapted for use of narcotic drugs by subcutaneous injection. It requires that sales of such instruments shall be recorded. Upon blanks furnished by the Narcotic Board, physicians may issue a permit to a patient under his charge for the possession of a hypodermic syringe.

Section 25 and 26 of this Chapter allow dangerous drug addicts upon complaint under oath to a district court judge or clerk to be committed. An addict may even apply to the Narcotic Board for treatment—he is then obliged to remain under treatment at least one year.

Chapter 1432. Creating a State Public Health Commission and office of State Director of Public Health.

Commission to consist of five members appointed by the Governor—one of these members to act as chairman. Said Commission to appoint the director at a salary not exceeding $6,000.00 per annum. The director will act as secretary, state registrar, chief executive and administrative officer and official agent of Commission.

This Act takes effect September 3, 1929, and at that time all present appointees of present Board of Health shall vacate their offices.

Chapter 1399. Of Optometry—A duly licensed physician or optometrist must be in charge at a place of business for the sale of eye glasses, spectacles or lenses for the correction of vision.

It regulates the practice of optometry—optometrist must be 21 years of age—high school graduate or equivalent — two years in a recognized school of optometry and one year with an optometrist before he is permitted to take the examination.

Chapter 1404. Of the practice of medicine—referring to chiropractors. Lowers the age to 23 years—it was 25 years—that a person shall be in order to take the examination. Requires annual registration in October with a $5.00 fee payable to the Chiropractor's Board.

Chapter 1447. Relative to admission and treatment of patients at the Psychopathic Wards of the Providence City Hospital.

Any person in need of immediate care and treatment because of mental disorder, other than drunkenness, shall be received and detained in said ward for a period of not more than 15 days—or longer at the discretion of the Superintendent of the City Hospital.

Chapter 1384. Requiring physicians to report gun shot wounds coming to their attention.

Chapter 1412. Of the Penal and Charitable Commission—Permits parole and discharge of any inmate of State Hospital for Mental Diseases, the Exeter School and State Infirmary or allows transfer from one institution to another.

At the request of the House of Delegates the Shepard-Towner-Newton Maternity Bill pending before the National House of Representatives was opposed by the Committee. Telegrams were sent to Rhode Island's five representatives in Congress, acquainting them of our ideas. A reply was received from each stating that the bill would receive his consideration.

Finally, through the active interest of the Rhode Island Medical Society members, the amendment to our State Workmen's Compensation Act, sponsored by the insurance companies, and which the House of Delegates voted should be vigorously fought by the Legislative Committee, died in the House Judiciary Committee. However, the Legislative Committee has promised the House Committee that it will submit some constructive Act for their consideration before the next session of the legislature.

Respectfully submitted,

Herbert E. Harris, M.D.
Charles F. Gormley, M.D.
Charles H. Holt, M.D.

The report of the Committee on Education was read, accepted and placed on file.

Committee on Education Report

As chairman of the Committee on Education I wish to report a series of five-minute talks over station WJAR. Before June 7th there will have been 14 of these talks embracing skin, X-ray, pediatrics, nose and throat, orthopedics, neurology, obstetrics, ophthalmology, general medicine and hospital administration.

Last year we attempted to invite several out of town physicians, not only to serve on the committee, but to give the talks. Although these out of town men were co-operative in every way, it seemed rather an unnecessary burden to place on their shoulders because of the distance they had to travel and the time given in getting here for such a short talk. This year, therefore, we confined our efforts to physicians of Providence and Pawtucket.

I wish to express my thanks to the physicians who gave these talks as well as to my committee, who did most of the work connected with arranging this series.

Yours respectfully,

Robert M. Lord.

THE FISKE FUND

1928-1929

Ninty-fourth Year

Trustees: Arthur H. Harrington, M.D.; Frank T. Fulton, M.D.; Julian A. Chase, M.D.

Wilfred Pickles, M.D., *Secretary to the Trustees*

May 13 1929—First Meeting of the Year

The Secretary presented the following financial report which was accepted by the Trustees:

Accounts of the Fiske Fund for the Year Ending May 15, 1929

Caleb Fiske Fund

R. I. Hospital Trust Co. Acct. No. 25,312:				
May 24, '28	Balance			$11,560.48
May 25, '28	Transfer to Prem. Fund		$448.88	
Oct. 31, '28	Interest	$222.22		
Apr. 30, '29	Interest	226.66		
May 13, '29	Transfer to Prem. Fund		222.22	
May 14, '29	Transfer to Prem. Fund		226.66	
		$448.88	$897.76	
May 15, '29	Balance			$11,111.60

Premium Fund

R. I. Hospital Trust Co., Acct. No. 17,841:				
May 24, '28	Balance			$141.72
May 25, '28	Transfer from Fiske Fund	$448.88		
May 25, '28	Premium award—Rayburn		$250.00	
Oct. 31, '28	Interest	6.80		
Apr. 30, '29	Interest	6.94		
May 10, '29	Advertising—Jour. A. M. A.		47.00	
	N.E.Jour.Med.		29.50	
May 13, '29	Transfer from Fiske Fund	222.22		
May 14, '29	Transfer from Fiske Fund	226.66		
		$911.50	$326.50	
May 15, '29	Balance			$726.72

Savings Fund

Providence Institution for Savings, Acct. No. 251:				
May 24, '28	Balance			$795.52
July 1, '28	Interest		$15.90	
Jan. 1, '29	Interest		18.25	
			$34.15	
May 15, '29	Balance			$829.67
Total Assets				$12,667.99

The Secretary was directed to proceed with the publication of the 1928 Essay entitled "Epidemic Encephalitis," by Charles R. Rayburn, M.D., of Norman, Oklahoma.

Drs. Harrington, Fulton, Chase and Pickles were present.

June 5, 1929—Second Meeting of the Year

The Secretary reported that the contract for printing the 1928 Essay had been awarded to the E. A. Johnson Company and that the Essay would be ready for distribution to the Society members at the annual meeting on June 6th.

It was voted that the amolument of the Trustees be returned to the Fund for general purposes, to offset the increasing costs of publication.

Three essays were submitted in the current competition, and it was voted to award the premium of two hundred dollars to the essay entitled "Intracranial Tumors—Their Pathology, Symptomotology, Diagnosis and Prognosis," by Dr. Cyril B. Courville of Loma Linda, California.

It was further voted that a premium of two hundred dollars be offered for the 1929-30 Essay on the subject "Lowered Basal Metabolism — Its Causes and Clinical Significance."

The Secretary was directed to make inquiries relative to publishing the Essay on Brain Tumors.

Respectfully submitted,

Wilfred Pickles,
For the Trustees.

NECROLOGY

The Committee on Necrology wishes to report the following deaths among the members of the R. I. Medical Society since the last annual meeting:

Dr. A. B. Briggs, June 5, 1928; Dr. Meyer A. Persky, August 31, 1928; Dr. James Raymond Morgan, September 25, 1928; Dr. Harry Winfield Smith, December 24, 1928; Dr. Ransom H. Sartwell, January 11, 1929.

Dr. Alexander B. Briggs was born in Hopkinton, November 12, 1850. He graduated from Harvard Medical School at the age of 21 in 1872. He was a member of the State Board of Health for 15 years, an incorporator of the Washington County Medical Society and its President for two years, a member of the R. I. Medical Society, the American Medical Society, the Pan American Medical Congress and the American Public Health Association.

Dr. Briggs had served as President of the Ashaway Savings Bank, President of the Ashaway Woolen Company, Vice President of the Tennessee Line and Twine Co. of Elizabethtown, Tenn.,

a Director of the Tennessee Cotton Mill Company in the same place, Director in the R. I. Electric Protective Co. of Providence and Director of the Ashaway National Bank, Niantic Menhaden Oil and Guano Co. of South Lyme, Conn.

Dr. Briggs represented Hopkinton in the General Assembly in 1887 and 1888.

He died June 5, 1928, at the age of 77 years.

Dr. Meyer A. Persky was born in Russia in 1892. He graduated from Tufts Medical School in 1915. He was a member of the Providence Medical Association, the R. I. Medical Society, a former President of the Jacobi Medical Club, a Fellow of the American Medical Association, a member of the Overseas Lodge of Masons and Providence Royal Arch Chapter, Surgeon in the Providence Post of the Jewish Veterans of the Wars of the Republic, a member of the Prague Surgical Association and the Providence Sheep Skin Club. He was associated with the medical staffs of the Miriam and Homeopathic Hospitals of Providence.

Dr. Persky saw active overseas service as a medical officer during the World War and returned to Europe in 1926 for post graduate work in surgery.

In June, 1928, his paper on Brachial Plexus Anaesthesia was published in the *Annals of Surgery*.

He died August 31, 1928, at the age of 36 years.

Dr. James Raymond Morgan was born in Waterford, Conn., September 28, 1847. His medical training was received at the Harvard Medical School, where he entered in 1868. He had the fifth appointment as interne at the Rhode Island Hospital, returned to Harvard and graduated there from the Medical School in 1873. He studied one year in Vienna specializing in dermatology and obstetrics.

He was associated with the staff of the Rhode Island Hospital for a period of 52 years, occupying during that time the position of Surgeon to the Out Patient Department, Visiting Physician to the House, and Consultant.

He left to the Rhode Island Hospital $4,000 for a bed in memory of his mother and $11,000 to the Out Patient Department for the promotion of the treatment of diseases of the skin.

He died in the Rhode Island Hospital, September 25, 1928, at the age of 81 years.

Dr. Harry Winfield Smith was born in Auburn, Me., August 31, 1867. In 1890 he graduated from Tufts, receiving his medical degree from Harvard in 1893. He was a member of the Providence Medical Association, the Rhode Island Medical Society and the American Medical Association. He was Medical Examiner for Scituate and Foster, and Health Officer for Scituate. He was Trustee for the Scituate Public Library and a member of the Greenville Masonic Lodge.

He died December 24, 1928, at the age of 61.

Dr. Ransom Harvey Sartwell was born in the town of Mooers, N. Y., on December 30, 1887. He graduated from the University of Vermont College of Medicine in 1911. He was a member of the Providence Medical Association, R. I. Medical Society, The American Medical Association, The American Psychiatric Association, Massachusetts Medical Association, Massachusetts Society of Psychiatry, R. I. Medico Legal Society, a Director of the R. I. Society for Mental Hygiene and a member of the R. I. Society of Neurology and Psychiatry. He was Secretary of the R. I. Alumni of the University of Vermont, member of the Exchange Club of Providence and a member of St. Albans Lodge of Masons, Foxboro, Mass.

In 1915 he became Junior Assistant Physician at the State Hospital for Mental Diseases at Howard, R. I., soon being made the Resident Physician to the Penal and Reformatory Institutions of the State. In 1918 he left Rhode Island to become the Senior Assistant Physician for the Foxboro State Hospital at Foxboro, Mass. In 1923 he became the Assistant Superintendent at the Worcester State Hospital in Massachusetts. In August, 1924, he returned to Rhode Island as the Superintendent of the State Infirmary of Rhode Island and in such position he wrote several outstanding papers on occupational therapy and social work. In 1926 he was again promoted—to the position of Superintendent of the State Hospital for Mental Diseases at Howard, R. I.

Dr. Sartwell died January 11, 1929, at the age of 42 years.

The Committee wishes to mention the name of Doctor James H. Davenport who was born in Fall River, Mass., March 17, 1862. He received the degree of Doctor of Medicine from both the University of Vermont and Harvard Medical School. He was interne at the Rhode Island Hospital, 1885 and 1886, and at the Boston Lying-In in 1887. He became Assistant Surgeon and later Surgeon to the Department of Gynecology at the Rhode Island Hospital where he was actively associated for over thirty years. To the Rhode Island Medical Library came the gift of his splendid and unique library of the literary works of medical men.

He died at the Jane Brown Memorial Hospital. October 15, 1928, at the age of 66 years.



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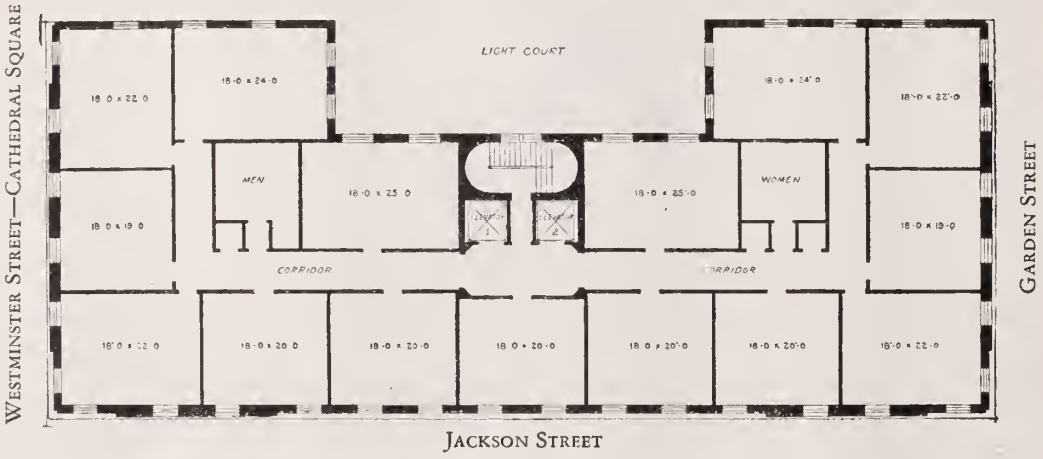
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2. Loss of weight
3. Spasticity of arms and legs
4. Rigidity of neck
5. Restlessness and fretfulness

Hoobler cites that the usual dietary of an infant in this country up to its third month is human milk or cow's milk, with the addition of sugar, possibly a milled cereal, orange juice and cod-liver oil.

On analysis, Vitamins A, C and D are found to be present in this diet. But only minimal and, in many cases, subminimal amounts of Vitamin B are to be found.

With the addition of Vitamin B to the diet Hoobler noted that after two weeks the infant had changed from a thin, pale, spastic, restless, whining child, refusing part of its food, to a happy, rosy cheeked, smiling baby whose appetite seemed never to be completely satisfied and whose gain in weight was remarkable.

He concludes, therefore, that "every infant should have an addition of Vitamin B to its diet and should not depend on milk, either human or cow's, as its only source of this vitamin."

The question naturally arises then, what shall be the source of supply of Vitamin B for the infant?

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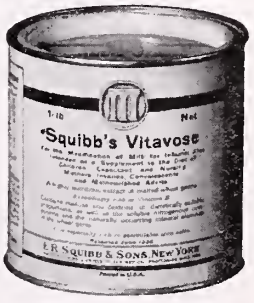
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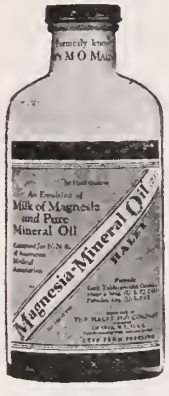
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ORIGINAL ARTICLES

THE SIGNIFICANCE OF HEMOLYTIC STREPTOCOCCUS IN THROATS OF HOSPITAL PATIENTS.*

By

Dr. D. L. Richardson, Providence, R. I.
Mr. Edwin Knights, of City Hospital Staff,
Collaborating.

About 50% of those who have investigated the cause of scarlet fever concluded that streptococci either were the only etiological factor or at least played a prominent role in its causation in conjunction with some unknown organism. This belief was so widespread that when Dr. and Mrs. Dick first began in 1921 to publish the results of their experiments with hemolytic streptococci they were read by sympathetic listeners everywhere. The human experiments which they performed and which were done in a scientific manner, were very convincing and, while there are hiati yet to be filled in, authorities generally not only in this country but all over the world are satisfied that scarlet fever is caused by some strain or strains of hemolytic streptococci.

Up to the present time there has not been found any reliably scientific method of differentiating the scarlet fever hemolytic streptococci from other strains of hemolytic streptococci in spite of extensive investigations. A technique frequently employed for this purpose is to identify the toxin produced by the hemolytic streptococci under investigation by skin tests and these, as is well known, are not always to be depended on. Other methods of differentiation are employed but they certainly have not been perfected.

The valuable contributions of Dr. Ruth Tunnicliff are an excellent example of the progress being made in the identification of scarlet fever streptococci. It is quite obvious, however, that any technique which depends on the use of immune sera presupposes that animals have been immunized to all strains of streptococci which will produce the disease in human beings. The Dicks have definitely shown that there are at least two culturally different strains of scarlet fever streptococci, and any polyvalent immune streptococcus serum may still lack antibodies of one or more specific strains. Continued research and human experimentation may be depended upon to in time obviate this difficulty. If one is to be very critical only those strains which were used by the Dicks in their human experiments can be claimed as being scarlet fever hemolytic streptococci. And yet, both scarlet fever toxin and antitoxin are being prepared from other streptococci found in the throats of scarlet fever patients. Even the Dicks approve of the use of certain strains of streptococci isolated from scarlet fever patients which have not been used to produce experimental scarlet fever, along with their two original proven strains in the preparation of these two products. While undoubtedly most of these other strains are authentic strains there is sufficient chance of error to cast some doubt on the reliability of these products. In spite of this, however, there is sufficient data from clinical experience to warrant the use of scarlet fever antitoxin in selected cases, those which actually need it. Less faith can be placed on the results of the toxin for the Dick test. On the other hand, there are many favorable reports on the reliability of immunity produced against scarlet fever by toxin inoculation.

Naturally, following the discovery of the Dicks, physicians became intensely interested in the possibility of culturing the throats of patients as an aid to diagnosis and to determine when a scarlet fever patient could with safety be discharged from isolation instead of relying on an arbitrary period of quarantine. In other words, to follow procedures which have long been used in diphtheria.

Over three years ago at the Providence City Hospital we began taking cultures of scarlet fever patients at the time of discharge after the

*Read before the Annual Meeting of the Rhode Island Medical Society, June 6th, 1929.

usual isolation period, with the idea of discovering whether patients who went home with hemolytic streptococci in the throat were more likely to give the disease to other members of the family than those who had no organisms at the time of their dismissal. Previous to 1927 this practice was not uniformly carried out and since it is important to draw conclusions only from a large number of cases publication of our experience is deferred to a later date.

So impressed had we been with the possible value of knowing whether patients had hemolytic streptococci in their throats on admission as an aid to diagnosis and on discharge for detecting carriers, that in Februray 1927, a technique was introduced for taking cultures on all new patients routinely and at discharge on all scarlet fever and diphtheria patients.

In the course of this work we have sought to throw a little more light on four points in particular.

1st. Disregarding cultural and serological classifications of the hemolytic streptococci (Beta type) we have attempted to find out of what value, if any, blood agar plate cultures of throat and nose secretions would be as an aid in diagnosis.

2nd. The incidence of hemolytic streptococci (Beta type) in the major contagious disease admitted to this hospital.

3rd. The value of blood agar plate cultures in determining the necessary quarantine period in scarlet fever.

4th. And last but not least the practicability of substituting blood infusion agar for Loeffler's coagulated blood serum as a routine nose and throat culture medium.

During the period 1910 to 1927, inclusive this hospital followed the example of practically all other contagious disease hospitals in using Loeffler's coagulated blood serum as a medium for culturing diphtheria bacilli. It seemed like breaking a sacred laboratory rite to think of letting a standard medium of proven worth like Loeffler's go by the board, but that is exactly what was done. It was not possible to take duplicate cultures on Loeffler's serum and on blood agar every time a nose and throat culture was wanted. The volume of cultural work would have been too great.

It became necessary, therefore, to prove the value of blood agar as a medium for diphtheria cultures. This was done by running duplicate cultures during January, 1928, on all the patients in the diphtheria ward. The results were even better than we had expected. Not a single positive diphtheria case was missed culturally on the blood agar that was found positive on the Loeffler's medium, and a few positive cultures were picked up by the blood agar which were negative with Loeffler's medium.

The question of expense was next considered and here again a point was gained in favor of the blood agar plate method. Liter for liter the actual cost of the ingredients of the blood agar medium was much less than the cost of the ingredients of Loeffler's medium. This may in part be due to the fact that sheep's blood taken with sterile precautions at the time the sheep are bled to furnish blood for the Wasserman test, was used.

The labor involved in the preparation of the blood agar plates is insignificant in comparison with the labor involved in the preparation of Loeffler's medium. In one day devoted to the preparation of stock infusion agar (the base for the blood agar plates) one man can prepare 30 or 40 liters of infusion agar, adjust the entire batch to a uniform P. H. (7.8) and sterilize it in convenient amounts for pouring plates. Such an amount of stock medium lasts us from 3 to 5 months and besides its convenience provides the added advantage of a uniformity in product which it was never possible to obtain with Loeffler's medium.

Standard glass covered petri plates 3½" in diameter receive approximately 10 cc of the 7½% of sheep's blood infusion agar. A smaller size dish could well be used for further economy. On one-half of each plate is planted the throat culture and on the opposite half the nose culture. This eliminates sorting and pairing up of nose and throat cultures on the same patients when the cultures are smeared for examination. After 12 to 14 hours incubation the cultures are smeared from the plates on glass slides, stained with a suitable dye and examined microscopically for diphtheria bacilli. The same plates are also examined microscopically for colonies of hemolytic streptococci and their prevalence is indicated in the report in degrees of 1, 2, 3 and 4 plus.

Very little difficulty is experienced in recording these results, and with a little practice it was found unnecessary to transplant hemolytic colonies to broth for further identification. When we speak of hemolytic streptococci we refer to the broad classification which Schottmueller (Schottmueller, Munden, Med. Wchuseter., 1903) describes as streptococcus longus or hemolyticus and which has been more recently elaborated upon by Smith and Brown (Smith & Brown med. research, 1914, 31:455 Monogr. Rockefeller Institute, January, 1919, No. 9) as the Beta type of hemolytic streptococci.

No doubt there has been a small percentage of error in the cultures which were classed as 1 and 2 plus positive for hemolytic streptococci but the 3 plus and 4 plus plates were extremely easy to distinguish. In the data compiled below the 3 plus and 4 plus cultures have been put in one group and the 1 plus and 2 plus cultures in a separate group to help make allowance for these errors.

During the period February 1, 1928 to January 31, 1929, inclusive 1794 patients were admitted to the Hospital and during the same period the laboratory examined 11,838 cultures for hemolytic streptococci on these patients. For the purposes of this study 8,678 cultures, taken on 1,407 of these admissions have been tabulated. The 387 admissions not tabulated include a certain number of patients still in the hospital at the time the tabulation was started and a large number of syphilitic cases admitted for lumbar punctures only and from whom no cultures were obtained.

Grouping the cases of contagious diseases admitted during the period of this study by the primary diagnosis on discharge, the number of cases in each group and the number of cultures taken are shown in table I.

TABLE *I.*

	Number of patients	*Number of cultures*
Scarlet Fever	335	2960
Measles	287	1210
Diphtheria	216	2102
Naso-pharyngitis, Laryngitis	75	398
Influenza	72	282
Tonsillitis	62	374
Whooping Cough	47	104
Erysipelas	35	142
Other Diseases, Tuberculosis, Gonorrhoea, Syphilis, Bronchitis, Pneumonia, Chickenpox, Otitis Media, Mumps	278	1106
	1407	8678

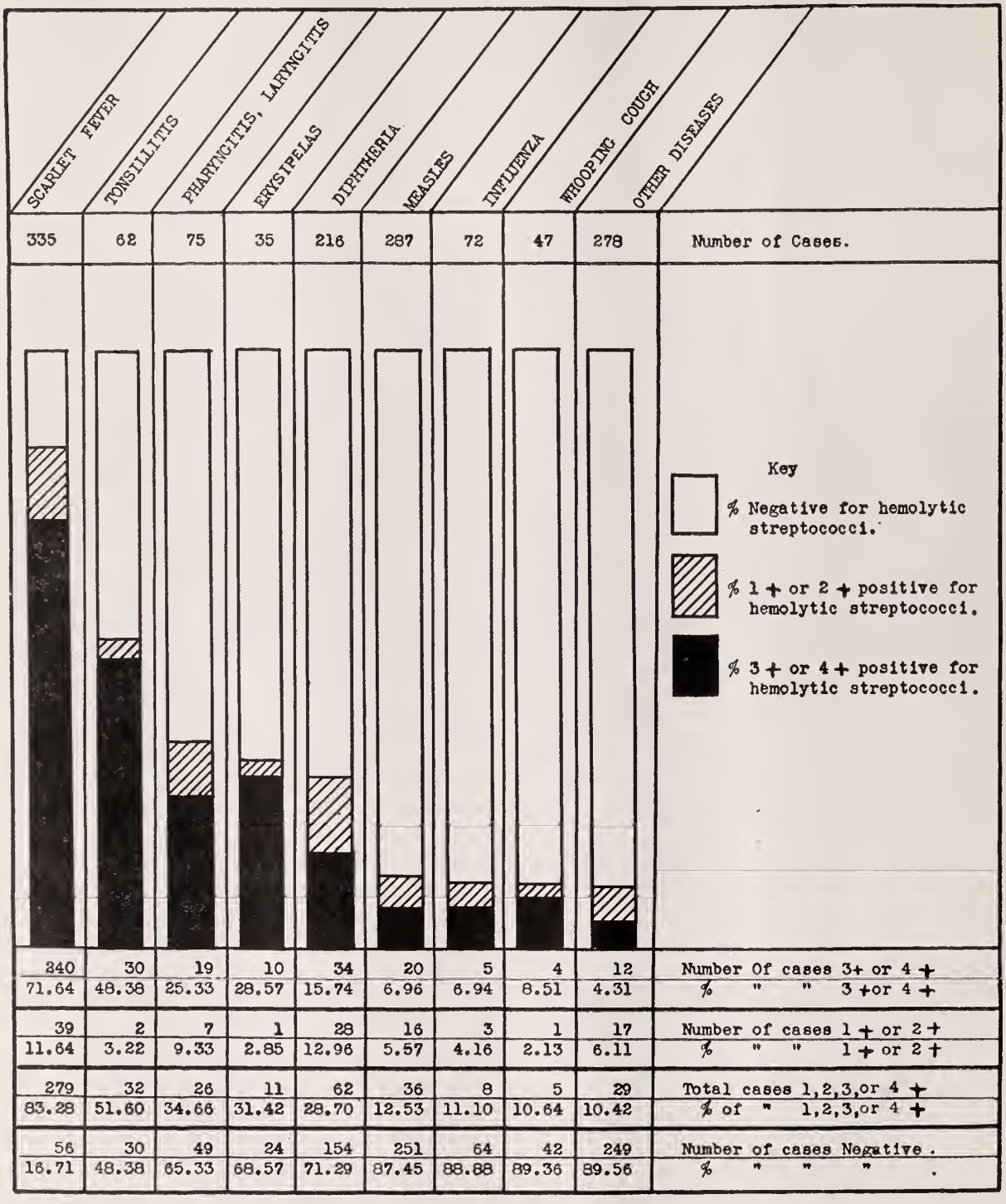
A thorough study of the 1,401 cases included in Table I was made and much interesting data obtained. Chart "A" shows the results of all of the cultures taken in the various disease groups, and in each disease it shows the percentage of cases which showed 3 or 4 plus cultures, the percentage of cases which showed only a 1 or 2 plus and the percentage of cases which had negative cultures for hemolytic streptococci.

A study was next made of the percentage of cases in the various diseases which showed a 3 plus or a 4 plus hemolytic streptococci culture in one or both of the first two cultures, taken on admission. A chart prepared from these figures (Chart B) could, for practical purposes, be superimposed on (Chart A). This demonstrates that the percentage of cases which showed 3 plus or a 4 plus positive cultures at any time while in the hospital was practically the same as the percentage in which either the first or second culture taken was 3 or 4 plus positive.

Data concerning the percentage of cases of scarlet fever showing positive hemolytic streptococci at the time of discharge is readily obtainable from our records. During the period of this study the percentage of discharged scarlet fever patients who showed positive hemolytic streptococci cultures at the time of discharge was 28.06% and 71.64% were negative.

For the same period a study was made of the prevalence of diphtheria carriers among admitted patients. Among 1,190 patients admitted for diseases other than diphtheria 8.2% were diphtheria carriers. During the same period about 11% were hemolytic streptococci carriers excluding scarlet fever, tonsillitis, naso-pharyngitis and laryngitis, erysipelas and diphtheria. It is obvious that the incidence of scarlet fever carriers was about the same as that of diphtheria carriers. The high incidence of hemolytic streptococci in

CHART A

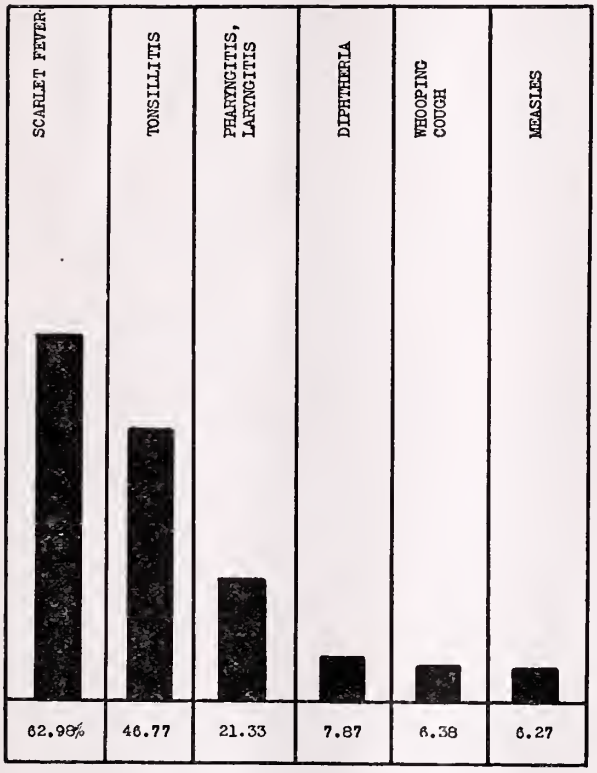


SCARLET FEVER	TONSILLITIS	PHARYNGITIS, LARYNGITIS	ERYSIPELAS	DIPHTHERIA	MEASLES	INFLUENZA	WHOOPING COUGH	OTHER DISEASES	
335	62	75	35	216	287	72	47	278	Number of Cases.
240	30	19	10	34	20	5	4	12	Number Of cases 3+ or 4 +
71.64	48.38	25.33	28.57	15.74	6.96	6.94	8.51	4.31	% " " 3 +or 4 +
39	2	7	1	28	16	3	1	17	Number of cases 1 + or 2 +
11.64	3.22	9.33	2.85	12.96	5.57	4.16	2.13	6.11	% " " 1 + or 2 +
279	32	26	11	62	36	8	5	29	Total cases 1,2,3,or 4 +
83.28	51.60	34.66	31.42	28.70	12.53	11.10	10.64	10.42	% of " 1,2,3,or 4 +
56	30	49	24	154	251	64	42	249	Number of cases Negative .
16.71	48.38	65.33	68.57	71.29	87.45	88.88	89.36	89.56	% " " " .

acute diseases of the nose and throat can be explained by the fact that some of these were actually suffering from scarlet fever without the eruption, and that streptococci have long been known to be associated with acute throat conditions. Erysipelas is known to be caused by some strain or strains of streptococci. That the percentage of streptococci carriers is high among diphtheria patients may be explained in part by the fact that some of these patients had scarlet fever rather than diphtheria and should be classed as scarlet fever patients who were diph-

CHART B

PERCENTAGE OF CASES IN VARIOUS DISEASES WHICH SHOWED A 3+ OR 4+ POSITIVE IN EITHER ONE OF THE FIRST TWO CULTURES TAKEN.



theria carriers rather than diphtheria patients who were hemolytic streptococci carriers. Every year there are admitted a considerable number of acute throat conditions which cannot be classified clinically. These are usually called diphtheria if the cultures are positive and we can't explain the sore throat in any other way. In further explanation of the fact that the hemolytic streptococci carrier incidence among diphtheria patients is high it may be noted that the diphtheria carrier incidence among scarlet fever patients is almost always higher than the carrier incidence among other patients. Still another factor to bear in mind is that by the technique employed the finding of hemolytic streptococci carriers is probably more accurate than that of diphtheria carriers.

From facts which have been presented definite conclusions cannot be drawn but certain observations can be made.

1. When hemolytic streptococci are found in the throats of patients suspected of having scarlet fever this helps to confirm the diagnosis providing at least two or three cultures have been taken. If an equal number of cultures are negative this is even stronger evidence against the diagnosis of scarlet fever.

2. That, after ruling out tonsillitis, naso-pharyngitis and laryngitis, erysipelas and diphtheria, diseases which are either caused by streptococci or often associated with these organisms, the carrier incidence is only slightly higher than that of diphtheria.

3. That, quite likely epidemics of tonsillitis, otitis media, upper respiratory infections, and of infected wounds often seen in general hospitals are started by over-looked streptococci in disease particularly of the nose and throat and that some protection might be afforded to other patients by isolating all patients in whose throats hemolytic streptococci are found. The hemolytic streptococcus is one of the most deadly of all disease producing organisms and while there are mild strains of these organisms they so frequently cause serious infection or death, that whenever these germs are found in the nose and throat or in wounds the patient should be isloated.

4. That, blood agar plates are entirely satisfactory for culturing diphtheria bacilli as well as hemolytic streptococci and that it saves time and expense to use the one cultural procedure for both organisms.

Dr. Jordan: "A case of scarlet fever without eruption may be considered as one of severe tonsillitis until some other member of the family presents a rash.

"Many cases of sore throats with 4-plus hemolytic streptococcus are undoubtedly scarlet fever without a rash."

"Hemolytic streptococcus is always a bad organism to have in the throat."

Dr. Chapin: "Carriers are more frequent than was supposed. It makes us wonder if we are accomplishing much by placarding a house when so many carriers are at liberty."

Dr. McLeod: "A child with glands and history of running ear:—Culture showed hemolytic streptococcus. Quarantine was followed by a cessation of scarlet fever."

Dr. Brackett: "Numerous cases of hemolytic streptococcus, post-operative wound infections:— Operating room nurse who was found to be a carrier read aloud before petri dishes. Numerous hemolytic streptococci were found. The performance was repeated with a mask over the mouth and the number of germs was found to be decreased. No germs were found at all when both nose and mouth were covered by a mask. She continued to serve in operating room wearing nose and mouth mask and further infection did not occur."

Dr. Richardson: "A sore throat that can not be otherwise explained with 3 or 4 plus hemolytic streptococcus should be isolated, especially if there is vomiting.

The history of positive contact with scarlet fever should be persistently sought for.

A white count over 15,000 and eosinophilia, indicates scarlet fever.

There have been a number of return cases from discharged patients whose throats on discharge were negative as well as some whose throats showed 1 or 2 plus hemolytic streptococcus. This leaves us in a state of uncertainty as to the significance of the presence or absence of hemolytic streptococci in the throats of discharged patients.

CASE REPORT*

Presented by

Dr. William P. Buffum,
122 Waterman St.,
Providence, R. I.

Joseph P., age 10, birthday January 11, 1919.

In 1924, he had his tonsils removed because of frequent sore throats. No mention of rheumatic fever was made at this time.

In December, 1925, at 6 years of age, he was admitted to the R. I. Hospital with rheumatic fever and a diagnosis of heart disease was made at this time. He was discharged after one month and came to the O.P.D. At this time he looked sick, and his pulse was 120 sitting. His heart was enlarged, the left border being 3 cm outside the nipple, and the right border 4 cm from the midsternal line. The sounds had a tick tack rhythm and there was a slight systolic murmer at the apex. There was also a definite soreness in one ankle. His weight was 45 lbs. During 5 months we had almost no control over him and only saw him twice. His condition remained about the same until May, when he developed more arthritis and was readmitted to the R. I. Hospital. After 2 months in the hospital, he was one month at Crawford Allen and returned to the O.P.D. in August, 1926. The physical examination at this time was almost exactly the same and he had pain in both ankles.

Over a period of 8 months since we had first seen him in the O.P.D., he had had constantly arthritis, rapid pulse, and poor heart action. He had lost 3 lbs. in weight.

Joe was then sent to the Lakeside Preventorium and left there 6 months. For 6 weeks he was kept in bed all the time and then he improved so much that he was allowed up and about. On discharge his general condition was excellent. His pulse was less than 100 and reacted well to exercise. His heart was slightly smaller with a loud systolic murmer and a slight systolic thrill. It was at this time that Dr. Robey demonstrated him here, at the meeting of the New England Heart Association.

During the following year his condition was not so good. He lost 1½ lbs. in weight and finally developed arthritis and chorea.

Just a year ago he was sent to Lakeside again We kept him in bed constantly for four weeks and since then his exercise has been increased very gradually. For the last 2 months he has been allowed to play with the other children. He gained 11 lbs. and is now in good general condition. His heart borders are 2 cm to the left of the nipple and 5 cm to the right of the midsternal line and the other signs are typical of mitral stenosis.

This case is presented because it shows clearly the need of more careful supervision of children convalescent from rheumatic carditis. During the period from January to August, 1926, this boy was suffering from a subacute rheumatic infection with one acute recurrence. During most of the time he was not well controlled by his parents, and except for a short stay in the hospital was not kept in bed. Obviously there should be a cardiac convalescent home or some existing institution should adapt itself to take care of these cases.

*Read before the Providence Medical Society, April 1st, 1929.

CANCER RESEARCH PAST AND PRESENT*

By Herman C. Pitts, M.D.
Providence, R. I.

From the moment man became a thinking personality, perhaps only a little raised above the beasts that perish, he began to speculate on the causes of life and death and to cast about for means to cure or relieve the curse of illness that came upon him. Its cause was most naturally laid to evil spirits or to the displeasure of some god and the cure in consequence depended on propitiation of these. Whether man in these earliest of days made any attempt to classify disease, we have no means of knowing. Probably not. Later on, much later, in ancient India, in what is now Asia Minor and in Egypt, medicine became an art and the practice of that art in the hands of a few, pre-supposes an increased knowledge of disease. The fragments of writing that exist to the present day are interesting but not instructive. The first real start in scientific medicine was made in the Golden days of Greece, in the age of Pericles and the man who made the start and whose influence was felt for hundreds of years, was Hippocrates. His clinical notes after 2,500 years give us a picture of disease that cannot be surpassed. He describes cancer and gives as a cause an accumulation of black bile in the area affected. So here we have in Hippocrates' writings, the first recorded speculation, research as it were, into the nature of the disease we are considering. Even in his day, he found that art is long, experience is baffling and cure difficult. And so it has been down through the ages. Excision where excision could be practiced and a vegetable diet for internal tumors, was what Hippocrates recommended. How very little we have progressed since his time.

The pitiful inadequacy of such treatment led to further study, as such study became possible through increased knowledge; and further study led to the formation of various theories as to the nature and cause of cancer.

I trust it will be of interest to review briefly these theories and their rise and fall, and to give some idea of the enormous amount of time and treasure that have been devoted to cancer research. That this search is baffling is proved by the fact that to the present time nothing we have learned brings us any nearer to a solution of the problem. Much has been learned—but much more must still be learned before the key is found that will unlock the casket that hides the mystery.

Among the many theories regarding cancer that have occupied men's minds and through which they have sought to explain its cause and control and its growth, the embryonal theory of Cohnheim stands pre-eminent. This is so because the known facts fit in so exactly with what it holds. The theory was outlined in fact, many years before Cohnheim elaborated it, when Lobstein in 1829 pointed out the similarity between the growth of embryonal tissue and cancer. The difference between the two, lying in the fact that cancer had lost the controlling influence of the organism in which it grew. Remak in 1854 maintained that cancer developed in misplaced islands of epithelial cells existing in tissues not normally containing epithelium. These two earlier ideas were elaborated by Cohnheim into a perfectly logical and well worked out theory. Careful study revealed the fact that a long list of tumors, by no means all of which are malignant, must arise from small bits of misplaced embryonal tissue. The extreme is reached when we consider dermoid tumors with their collection of hair and teeth and bone. It has been found that these embryonal rests are really common, that each one of us probably harbors many such minute collections of misplaced cells. The weakness of the theory lies in the very fact that the majority of human beings live a long life and die without developing cancer. They tell us one in eight women and one in eleven men die of cancer. Terrible as that mortality is, there is still a large percentage in which the embryonal rests live on in perfect content and never become imbued with ideas of expansion. Evidently something more than Cohnheim's theory is needed to explain the existence of cancer.

Anyone of us who thinks continuously on any subject gradually comes to hold very definite ideas concerning it. So it was that about ten years ago I out of my own feeble intellect, evolved what I thought was a most wonderful theory—one so simple that I coudn't see why it hadn't been thought of before. Imagine my chagrin and

*Read before the Rhode Island Medical Society, March 7th, 1929.

the pricking of my toy balloon when I read that the germ of my theory, its very foundation, had been put forward nearly one hundred years ago! Nevertheless, as it is perfectly logical and since it deals with cells and is more or less linked with Cohnheim's theory, I should like to present it here—but not as my own. The theory is based on the control over cell growth exercised by the organization of the body. We can readily grant that as the embryo develops and certain cells become differentiated into epithelial cells, or liver cells or what not, they assume a certain definite structure and that in their dividing, the resulting cells, if the division be normal, will have the same differentiating structure. They inherit this structure from generation to generation and as long as their particular structure is maintained they will behave as epithelial cells or liver cells or whatever type they may represent and will be under the control of the organism. Now suppose, because of a change in nutrition or a change in the balance of salts supplied, a parent cell in its division fails to transmit its full differentiation. The daughter cells are slightly changed and their progeny deviate still more from the normal. Very soon, we have a collection of cells that are dangerously different from the orderly group from which they sprang. They have a potential capacity for growth, they are free from the hampering control of the organism and the stage is very logically set for the wild overgrowth of cells that we call cancer. It all sounds very reasonable but it does not as yet anyway explain what starts that first cell going wrong.

The parasitic or infectious theory of the origin of cancer is one of the very oldest. It dates back to ancient times, lived on through the Middle Ages and today, is strongly advocated by many. It had its origin in the observed fact that cancer appeared in several members of a household or was prevalent in certain localities or even in certain houses. These cancer houses, so-called, were tabulated and the number of cancer cases appearing in them over a course of years counted up. The results convinced many that these houses must harbor a contagion of some kind that passed the disease on from person to person. Many have argued that an infection must come through contaminated water or soil. Of course, there are strong arguments against the theory. If cancer were contagious, it is almost certain that doctors and nurses who come in contact with the disease so often would show a much larger cancer incidence than any other group. This we know is not true. Then again, it is pointed out that husbands of wives suffering from cancer of the uterus do not develop cancer and that wives whose husbands have cancer of the penis are no more afflicted with cancer than the average.

With the advent of the microscope came a tremendous search for bacteria and protozoa, spirochetae and blastomycetes as the cause of cancer. No one of the great numbers found and ascribed as the cause has stood the test of time. The expenditure of labor and time and money in this very fruitless search has been astonishing.

When Rous, in 1911, announced that a filtered extract of a very virulent chicken sarcoma injected into healthy chickens produced a similar growth, the scientific world felt that at last progress had been made; that his experiments proved that in sarcoma at least, an ultra-microscopic organism, one that would pass through a fine filter, must be the cause. Further careful study seems to show that this filtrate must be classed as a chemical irritant and the production of a tumor by it in the words of Prof. Ewing "merely illustrates the indirect action of irritants on pre-disposed tissues." Since Rous' time, the most noteworthy contribution along these lines has come from England. In July, 1925, Gye advanced the theory that all tumors are due first to a non-filterable, ultra-microscopic virus common to all tumors, and second, to an unstable chemical agent, peculiar to each tumor and also to each tissue. This he calls the "specifice factor." For instance, according to his theory, the virus from a mouse carcinoma plus the specific factor from a fowl sarcoma, injected into a healthy fowl will produce sarcoma. The virus according to Gye could be cultivated anaerobically. The specific factor resides in a sand and paper filter of the tumor tissue studied, treated with enough chloroform to kill whatever virus it might contain.

The whole theory is most ingenious but it has one very grave and very damaging fault. No one besides Gye, using Gye's own technique has been able to get Gye's results. And even if they could, even if we grant that Gye's argument is correct, we are still at a loss to explain cancer. What is the "specific factor?" Are we to suppose it is present in each one of our numerous dif-

ferent tissues at all times waiting for the virus to enter and when it comes, joining hands with it to produce a tumor? It sounds absurd surely. The solution of the problem is not yet!

There is no belief regarding cancer more firmly intrenched than the belief in its being hereditary. And I must say, a study of the histories of patients gives good grounds for that belief. In the literature, we find numberless histories of families where a majority of the members through several generations have been sufferers. The experience of each one of us is so bound to confirm the general feeling that it is hardly necessary to give further evidence. One celebrated case will suffice; Napoleon, his father, one brother and two sisters are supposed to have died of cancer of the stomach.

Experiments in breeding mice have shown without question that the percentage of cancer in certain strains can be greatly increased by proper in-breeding. Maud Slye who has done an enormous amount of work along these lines believes that cancer is inherited after the manner of a Mendelian recessive. That is, if a mouse from a cancerous strain is bred to one from a non-cancerous strain—the progeny do not develop cancer, but are capable of transmitting the tendency to cancer to the next generation. Slye wishes to apply what she has learned in the laboratory, to human beings and believes that by proper eugenics, a tendency to cancer in man could be bred out entirely.

There are many who believe that Slye is wrong, that her experiments prove nothing and that her deductions from her experiments which prove nothing, are absurd. So there we are again—left as usual with nothing definite to pin faith to! If Slye is right, then surely the dictum that in the interests of the public this doctrine should be combated is wrong. Rather, we should shout from the housetops that no children should in the future be born from parents either of whom gives a history of cancer in the family.

There is one thing in cancer genesis that seems fairly clear and that most researchers can agree upon and that is the influence of trauma. This may, of course, be of many kinds—such as mechanical, thermal or chemical. The mechanical irritation of a jagged tooth, for instance, or the celebrated and off quoted Kangri cancer, due to the repeated irritation of the abdomen by the hot charcoal warming pans worn on the abdomens of men in mountain India, or the chemical irritation of aniline excreted in the urine, in producing cancer of the bladder in aniline workers, are all examples. A knowledge of these facts has caused an enormous amount of experimental work on animals. Countless rabbits have had their backs and ears painted with coal-tar over long periods of time and the epithelial growths resulting occasionally after these efforts have been studied. The fact that some of these animals fail to grow cancer—that many humans may suffer trauma of some kind for years without cancer developing points pretty clearly to there being another very elusive element necessary. The trauma, whatever it may be, must be considered the exciting cause and not the whole cause. In other words, the potential tendencies lying dormant in the individual's tissues are merely brought to light by the trauma.

I am led to speak of and express my admiration for the marvelous work on tissue culture that has been done in an effort to explain cancer. When one sees the incubators at the Rockefeller Institute crowded with bits of tissue of all kinds growing in an artificial medium, one marvels at the ingenuity of man. And yet, I must confess that the work leaves me cold. At an enormous cost of money and time and skill, they prove one thing and one only; and that is that almost any group of cells can exist on artificial food when separated from the mass of its fellows. There is only one chance that great good can come from experiments along this line. If some day, through special feeding, normal cells can be made to develop into cancer cells, the world has learned a secret that will be of the greatest value.

When all is said and done, it seems to me that a solution of the cancer problem lies in the study of the cancerous individual as compared with the probable normal. In our cancer work in the Brown University Laboratory, we are following this line of attack.

Cancer patients as they are admitted to our cancer clinic are studied as systematically as possible and the results obtained are compared with those from the normal or at least non-cancerous individuals. As we go along, new methods of study of course suggest themselves. Until a very

large series can be tabulated and comparisons made, it is perfectly useless to speak of our results. In conjunction with our work on patients, we are carrying on quite extensive work with cancer in mice. Through the kindness of Dr. Boyd, we have been able to treat a long series with X-ray after the tumors have been injected with various metallic salts. I am sorry to say our results were disappointing. At present, we are trying the injection of calcium chloride in various strengths directly into the tumors. Quite a fair proportion of these tumors gradually disappear and the mouse remains well. I am not as enthusiastic as I might be over these results because these tumors being transplants are more or less encapsulated and their disappearance is probably due in large measure to the killing action of the calcium chloride solution on the cells in a confined space.

As soon as we have bred a few rats and have tumors growing in them, we expect to study the effects of lead on tumor growth. We are the proud possessors of some radio-active lead. It's action may not differ, of course, from the action of ordinary lead. On the other hand, it may. At any rate, we will watch the results with much interest.

We are probably presumptious in attacking this problem at all. In fact, I have been told as much by one gentleman whom I approached for money to carry on the work. "If they have found out nothing at Rockefeller Institute or at the Crocker Institute or at Huntington Memorial or at any other of the many well equipped places devoting all their time and brains and energy to the work, what chance have you people here," he said, "to add even one little bit toward the solution of the problem." Very likely he is right and we have no chance and yet, I am buoyed up and urged onward by what the head of that very Crocker Institute, Dr. Carter Wood, said in a talk last year. His words were very nearly these; "Up to the present, we have found nothing. We seem to be as much in the dark as we were fifteen years ago. I believe the solution of the problem will come. It may not come in my life time—on the other hand, it may come tomorrow. Where it is coming from—no one knows. The obscure worker in the small laboratory has as much chance as the worker in the best equipped laboratory in the world." He didn't mention Providence specifically, you see, but the "obscure worker" and the "small laboratory" describe us exactly, and so we are encouraged to strive on.

STUDIES ON DIGITALIS IN AMBULATORY CARDIAC PATIENTS

Harry Gold and Arthur C. DeGraff, New York (*Journal A. M. A.*, April 27, 1929), in making studies on digitalis in ambulatory cardiac patients found that regarding the use of digitalis it is essential to bear in mind the practical distinction between (1) types of failing circulation in which the use of the drug results in striking improvement, and (2) types of failing circulation in which the use of digitalis is indicated on the basis of certain experimental data and theoretical considerations, but in which clinical study thus far gives evidence of little, if any, beneficial effect. It is pointed out that numerous errors in the interpretation of clinical observations have arisen from failure to consider this distinction. There is no essential difference between the behavior of digitalis in children and in adults. The drug is less often seen to produce striking improvement in children than in adults because the type of heart failure that is relieved most effectively by digitalis (congestive heart failure without active infection of the heart) is relatively common in heart disease among adults but relatively rare in that among children. In those cases in which less definite therapeutic effects are obtained, insufficient or excessive digitalization is more apt to occur because of the absence of a satisfactory guide to the intensity of digitalis action. Digitalis cumulation, as occurring in the course of the daily administration of a suitable fixed dose of the drug, can be shown to be a self-limiting process. The intensity of digitalis action present at the time when further cumulation ceases to occur depends on the size of the daily dose. Experiments cited show that, contrary to the view commonly held, a patient does not eliminate a fixed quantity of digitalis daily, but a quantity that varies with the amount present in the body. It is shown that the full therapeutic effects of digitalis may be induced in many cases by the daily repetition of such doses of the drug as the patient may eliminate daily after having been fully digitalized.

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FREDERICK N. BROWN, M.D., *Editor*
309 Olney Street, Providence, R. I.

CREIGHTON W. SKELTON, M.D., *Business Manager*
166 Broad Street, Providence, R. I.

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Henry M. Boss, Jr., President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

THE ART OF MEDICINE

The young doctor of to-day, fresh from medical school and hospital, is wonderfully well trained in accurate methods of diagnosis. To the older procedures of history, physical examination and crude laboratory tests he adds studies in the chemistry of the body fluids, electrocardiography, basal metabolism, roentgenology and a steadily increasing number of precise examinations. In treatment, too, he has weapons of which his forbears never dreamed—synthetic drugs, biological products and physical modes which are undergoing constant modification and improvement. He has, in brief, an excellent grounding in what is called "the science of medicine."

As he proceeds to use these methods in diagnosing and treating actual patients, however, he soon learns that the practice of medicine is much more complex than he had been led to believe. Despite all the refinements of diagnosis, the ailments of too many of his patients refuse to be nicely pigeonholed; and methods of treatment have an annoying way of failing when most needed, so that new ones must be devised or old ones revived. And so in time, if he is intellec-

tually honest and can learn from experience, he comes to a realization of the fact that medicine is not and never can be a science; that it may employ scientific methods but it remains an art; and that the essence of the art consists in treating the patient and not the disease.

And if this realization comes as a sort of disappointment to his ideals of scientific medicine, let him not be downcast, for he is practicing one of the most noble of arts, with surpassing opportunities for service. Let him take hope and courage from an estimate of his work such as that given by Robert Louis Stevenson, than whom no man of letters had better opportunity of judging our profession: "There are men and classes of men that stand above the common herd: the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarelier still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Herculean cheerfulness and courage. So that he brings air and cheer into the sick room, and often enough, though not so often as he wishes, brings healing."

WORLD-WIDE MEDICINE

Perhaps there is no group of men united by ties which more definitely transcend national boundaries than do those which bind the medical profession into one homogeneous whole the world over. "Narrow Chauvinism" in *Medicine* of which Osler wrote a quarter of a century ago has definitely become less and less apparent while more and more the work of the man in, for example, Sitka, Alaska is being influenced by the investigations of his colleagues in Buenos Aires or Bombay as the case may be. Agencies for the dissemination of medical knowledge and the comparison and standardization of procedures are more efficient than ever they have been heretofore. In this connection the recent Conference of the League of Nations Health Committee on Laboratory Tests for Syphilis held at Copenhagen (May 21-June 4, 1928) is of interest. A brief report of the proceedings has been published by Kahn in the *Journal American Medical Association* for August 3, 1929. Representatives of eighteen different countries met and compared their results in simultaneous tests of almost 500 known sera which were collected in the larger medical centers of Europe, such as London Paris and Berlin. The Conference came to very definite conclusions as to the value of the various tests and specific recommendations were made. The results are world-wide in their application and afford a splendid example of that type of co-operation which, if it could be more generally applied, would mean the doom of that narrow nationalism and bickering whose end result is war.

DOUBLE FECAL FISTULA OF SIX YEARS DURATION WITH COMPLETE CURE

By Panos S. Dukakis, M.D.
454 Huntington Ave.,
Boston, Mass.

The reason for reporting this case is because of the duration of the fistula and the result obtained after operation.

The patient, a female, 33 years of age, married, having three children, was referred to me by the family physician with the history that his patient was discharging a sero-purulent material from two openings on the abdominal wall for the past six years, following an operation for a pelvic abscess which was drained at that time for five weeks. During these six years patient had received electro-therapy and Alpine Lamp treatment from various sources with temporary relief, but these sinuses had persisted up to that time.

The patient was a rather nervous and apprehensive person but fairly well nourished. The physical examination was negative except for the abdominal wall which revealed a very ugly scar over the mid-right rectus muscle with two small openings at the upper border of the incision about one inch apart from each other, discharging a sero-purulent material. There were no masses or free fluid, no tenderness or spasm. There was, however, a marked post-operative hernia.

The main possibilities as to the causation of these discharging sinuses, i.e., foreign body, in

testinal tuberculosis and fecal fistula were considered. Because of the history of an operation of six years duration with prolonged drainage, the possibility of fecal fistula was foremost.

With the co-operation of Dr. Frank Maloney, then a roentgenologist at the Boston City Hospital. X-rays were taken before and after the injection of Beck's Paste into both sinuses. The plates prior to the injection of the paste revealed nothing remarkable, but those taken after the injection showed the paste lodged into the small bowel. Thus, having established the connection of these sinuses with the bowel, an operation was advised, and the patient consented.

On September 17, 1928, the operation was undertaken under ether anaesthesia. After the usual skin preparation the orifice of the sinuses was cauterized with carbolic acid, and a purse string suture was placed around them so as to invert them in order to avoid spilling of contents into the healthy tissues during operation. An elliptical incision was made on both sides of the old scar incision. On entering the peritoneal cavity the bowels were found to be adherent to the abdominal wall. As these were being freed an indurated stump of the appendix was found, about one inch in length which was leading to one sinus. The stump was removed in the usual manner as for an appendectomy. As the process of freeing the remainder of the bowel was continued, the second sinus was found to lead into the ileum. The tract of this sinus was removed and the rent in the bowel was closed. Then the old post-operative hernia was repaired and the abdomen was closed in layers without drainage.

The patient made an excellent recovery, the wound having healed with primary intention. The patient was discharged from the hospital on the twenty-first day after admission.

Seven months have elapsed since the operation and the patient reports a good scar, a gain in weight of ten pounds and the disappearing of her nervousness.

SOCIETIES

Providence Medical Association

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Arthur H. Ruggles, Monday evening, June 3, 1929, at 8:50 o'clock.

A letter from the council on Medical Education and Hospitals of the American Medical Association regarding hospital privileges and medical society programs was read and no action taken.

The Standing Committee having approved their applications, the following were elected to membership: Charles J. Ashworth, George Edward Clark, George Raymond Fox and Arthur P. Noyes.

Dr. Henry J. Hoye read an obituary on Dr. John F. Gannon and it was voted to spread this on the records, send a copy to the family and publish it in the Rhode Island Medical Journal.

The first paper of the evening on a case of Undulant Fever in Rhode Island, was read by Dr. Niles Westcott. He reported a case of fever in a young man which agglutination tests showed to be Undulant or Malta fever. The patient had been working among cattle. Undulant fever, enlarged spleen, joint pains, profuse sweats and relapses characterize this disease which also affects some domestic animals. The paper was discussed by Dr. Wing, Professor F. P. Gorham, Dr. George S. Matthews and Dr. Westcott.

Dr. Westcott reported a case of heart disease in a man who died in the fifties after suffering from the age of fourteen. The heart was exhibited and had double lesions of the aortic and initial valves. The patient also had pericarditis.

The second paper was by Dr. Frank M. Adams on Traumatic Mastoiditis. He reported two cases treated by him of mastoiditis following injury where incomplete X-ray work had been done and consultation delayed. Six other cases had been called to his attention. He felt that every head injury should be seen by the neurologist and the base of the skull and particularly the mastoid X-rayed. The paper was discussed by Drs. L. B. Porter, Gerber, Hoye, Gifford, Van Benschoten, Cutts, Corvese and Adams.

Dr. Wing suggested that a microphone and horn be placed in the hall to help out the acoustics. Dr. Harrington discussed this as did Drs. Partridge, Chase and Gifford. It was voted to refer the matter to the Building Committee of the Rhode Island Medical Society.

The meeting adjourned at 10:30 P. M. Attendance 60.

Collation was served.

Respectfully submitted,

Peter Pineo Chase, *Secretary.*

OBITUARY

JOHN F. GANNON

Doctor John F. Gannon, a member of this society, died suddenly in his office, 1955 Westminster St., on February 26, 1929, of an acute heart condition, probably coronary occlusion.

He was taken suddenly ill while talking to a patient and died before medical aid could be summoned.

Doctor Gannon was born in this city in 1876, educated in the city schools, graduating from Mount Pleasant Grammar School and La Salle Academy. He was then employed by the Western Union Telegraph Company, the Postal Telegraph Company, and the New York New Haven and Hartford Railroad Company.

Deciding to take up the study of medicine he entered Cornell Medical School, graduating with the Class of 1904. He then served an internship at Saint Joseph's Hospital, Yonkers, New York.

Returning to Providence he established an office in the Olneyville section of our city where he has practiced since 1906.

Doctor Gannon was a quiet unassuming man of exemplary habits and devoted to his profession, and to his brother and sisters with whom he made his home.

He was especially kind to the poor and gave freely of his service to their care.

He died as he had expressed a wish to die when his time came—at his work.

JOHN G. WALSH, M. D.
HENRY J. HOYE, M.D.
WILLIAM H. MAGILL, M.D.

HARRY WINFIELD SMITH

Harry Winfield Smith was a practioner of medicine in the town of Scituate for thirty years. The area of his practice included the towns of Scituate, Foster and parts of Smithfield and Johnston. The population of this district was between seven and eight thousand. He shared this territory with three or four other doctors. The distance between the extreme points of his calls may have been fifteen miles. This was before the City of Providence obliterated farms and villages of this locality that it might supply its people with water.

He began his practice with one horse, but soon he was using two and later three horses. Those were the days of stony and muddy roads. For nearly twenty years he knew nothing of the comforts of the automobile and the macadam road. He missed nothing in the way of weather. He faced the driving rain and the biting sleet and snow. On a cold winter's night when unable to find shelter for his horse, he would hitch him to a fence or tree; cover him carefully with a heavy blanket; kick away the deep snow from around his horse's legs, in case he had no shovel, pat him on the neck and leave him there—perhaps for many hours. He loved his horse and often pitied him. On a dark night and all alone, if your horse fell on the icy road perhaps you could free him from the tangle of harness and broken shaft; get him up; tie the harness; splice the shaft and drive on. Dr. Smith had to do it.

To us of today the compensation he received for his work seems small. For more than half of his professional life ten dollars was the fee for an obstetric case (easy or difficult) one dollar for a house visit, and fifty cents for an office call with no additional charge for medicine. Yet he provided well for his family and gave his son an expensive education.

It may not be realized how much time the country doctor of thirty years ago had to spend in preparing his medicines. Dr. Smith had to drive about eight miles to the nearest drug store. The country doctor bought his tinctures, fluid extracts, syrups and chemicals, and compounded his prescriptions; put up powders and even made pills. Then, as now one could buy empty gelatine capsules and also hollow suppositories. Into the suppositories he would put the powdered morphia; fit on the cap and melt the two parts together with the heated blade of his pen knife or a heated wire. He, like other doctors rolled his own bandages. If a plaster of Paris bandage was needed, he made it. Many at this time made their own splints. A very good splint was made from sole leather immersed in hot water and fitted exactly to the part. All this made much work for the doctor.

To Dr. Smith country life had its compensations. He liked the genuineness of the people and the neighborly contacts. He loved nature and its ever returning beauties.

He was born in Auburn, Maine, August 31, 1867. He received his elementary education in the city of his birth and graduated from the Edward Little High School. He took one year at Bates; then entered Tufts College and graduated in 1890. He received his medical diploma from Harvard in 1893. He first located in Providence, stayed there two years, then took an office in Rockland, Rhode Island, and after a few months moved to the neighboring village of Scituate, where he spent the remainder of his life.

In June, 1895, he married Flora A. Hackett of Auburn, Maine, a classmate and companion of his early life. He was medical examiner for Scituate and Foster; health officer for Scituate, and a trustee of the Scituate Public Library, in which he took great interest. He was a member of the Masonic Lodge of Greenville; of the Scituate Chapter and the Providence Masonic Council. He was a fellow of the Providence Medical Association; The Rhode Island Medical Society and The American Medical Association.

He had an only child, a son, Merritt P. Smith, a graduate in the civil engineering course of the Massachusetts Institute of Technology.

Dr. Smith was a Republican in politics. Like a good citizen he voted but took no great interest in party politics.

He had no particular hobbies. He enjoyed working in his garden, and at times he did a little carpentry and repair work. His chief pleasure was reading, not necessarily medical reading but of general literature as well. He loved his books and enjoyed reading aloud to his wife in the seclusion of his home.

In the sickroom he was very quiet. His answers and explanations were brief. His calls were strictly professional. He was kind and devoted to his patients, who became much attached to him.

Dr. Smith had been ill for nearly five years with chronic nephritis. He passed part of the winter of 1926 and 1927 in Florida, in the hope that he might check the progress of the disease.

He bravely continued his practice, saying very little about himself. The morning of his death, December 24, 1928, he made a house visit before breakfast and attended an office patient. As he sat at breakfast he said that he could not see; he became nauseated. He said to his wife, "I am very sorry to interrupt your breakfast." Those were his last words. He was immediately seized with convulsions and died in about three hours.

Those last words of thoughtfulness for another were characteristic of him. His whole life was spent thinking and doing for others. He died loved by those closest to him and respected by every one who knew him.

Irving S. Cook,
J. E. Mowry,
H. G. Partridge.

CALCIFICATION OF VESSELS IN DIABETES

Roentgenographic evidence of calicification of the vessels was present in the legs in 53 per cent. of 324 diabetic patients varying in age from 2 to 81 years examined by L. B. Morrison and I. K. Bogan, Boston (*Journal A. M. A.*, April 27, 1929). In the third decade 6 per cent. of the patients showed vascular calcification, and in the seventh decade 87 per cent. Twenty-one per cent. showed advanced calcification. Advanced calcification was not found under 40 years of age, although definite calcification was present in five cases. No case of gangrene was found under 40 years of age. Syphilis, dental infections and arthritis appear to play no part in the production of vascular calcification in this series. Seventeen per cent. of patients with calcification (average age, 41 years) and 49 per cent. of patients with calcification (average age, 59 years) have blood pressures over 150. Patients over 50 with sclerosis are about twice as apt to have high blood pressures as those without calcification. Six, or 9 per cent. of the patients with diabetes of ten years' duration, did not show calcification. Morrison and Bogan conclude from these observations that the incidence of vascular calcification increases with age and with the duration of the disease, and is higher in diabetic than in nondiabetic patients. The degree of the calcification increases as a rule with age and duration. The blood pressure in this series of diabetic patients increased with age but not with duration Roentgen examination is an accurate method of judging the presence of calcium in the vessel walls. It is more reliable than clinical methods in the diagnosis of vascular calcification. Roentgenograms of the extremities would be helpful to insurance physicians. Diabetes mellitus is an etiologic factor in the production of vascular calcification.

TEACHING OF MEDICINE

Ralph H. Major, Kansas City, Kan. (*Journal A. M. A.*, April 27, 1929), in a paper read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Feb. 18, 1929, says that a physician should be not only a doctor but an educated man, and that the standing of the profession will suffer if we turn out a lot of doctors who have galloped through the college and medical course. The degree of M.D. should indicate a certain educational and intellectual status. It means that the possessor of this degree has slowly and often painfully trudged up the difficult and winding path of knowledge until he has reached a certain summit—not that he has taken the funicular and arrived there in half an hour. Major says that he tries to teach the student the technic of taking a history, making a physical examination, carrying out the simpler laboratory tests and then, after these details have been mastered, of proceeding to the diagnosis and treatment. The physician should first know the symptons manifested by a patient even if the diagnosis is not apparent, for once he is sure of his observations he can, by reference to his books, usually make a correct diagnosis even when the disease is one of which he has not even heard. Medicine is not learned by diligent cramming over the midnight oil but by what one might term the "episodic method"—teaching of medicine as a series of episodes, at first perhaps unrelated, but later assuming the appearance of a connected story, or a well rounded experience as the episodes multiply. There is no doubt that medical students, like many physicians, attach undue importance to the laboratory. While we stress clinical instruction in medicine, if necessary, to the partial curtailment of didactic courses, we believe the latter have a limited but definite place in the medical curriculum. The question of the proper textbooks in medicine is a constantly recurring one, and to both student and teacher a very complex and often perplexing problem. Medical books are to be used as reference works and not as repositories of medical dogma which must be memorized and defended like the catechism. An effort is made to show that the clinical picture of a certain patient is the thing to fasten first in one's mind, and then one's knowledge may be extended by reading the composite picture of this disease presented in the textbook and noting wherein the condition of this particular patient resembles the usual picture and wherein it differs. Students should be encouraged to read good medical biographies. This historical method has a great teaching value. One lesson to impress on the student is that the patient consults him because of pain or discomfort, and that if a cardiac patient is seen in the late afternoon it is more important at that time to give the patient a comfortable night's sleep than to learn whether he has a mitral stenosis or aortic insufficiency.

DEDUCTIBILITY OF TRAVELING EXPENSES CONFIRMED

The Commissioner of Internal Revenue has acquiesced[1] in the decisions of the Board of Tax Appeals[2] in which the board held that a physician in computing his federal income taxes may deduct as a professional expense the reasonable cost of travel including railroad fares, Pullman accommodations, room and board, incident to attendance at meetings of medical organizations of which he is a member. The commissioner's acquiescence marks the end of the controversy by a decision in favor of the medical profession. To those physicians who in 1926 and thereafter paid increased federal income taxes because of the decision of the Commissioner of Internal Revenue in 1922 denying the ductibility of traveling expenses, the way is now open to obtain refunds of the excess paid. Presumably, however, the amount claimable as a refund will ordinarily be too small in individual cases to warrant the trouble incident to obtaining repayment. If the amount involved is sufficiently large to justify a physician in applying for a refund, he should obtain from the collector of internal revenue to whom the excess taxes were paid a copy of form number 843, execute it before a notary public or other officer authorized to administer oaths, and file it with the collector to whom payments were made. No application should be made, however, unless the physician is prepared to verify his claim by adequate evidence, in addition to his own affidavit, if called on to do so. It is presumed that the Commissioner of Internal Revenue will exercise a reasonable discretion, with respect to such demands, but nothing will be gained by submitting claims that cannot be reasonably well verified.—*Jour. A. M. A.*, April 6, 1929.

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[1]Internal Revenue Bulletin 8:12-1 (March 25) 1929.

[2]Cecil M. Jack v. Commissioner, 13 B. T. A. 726; J. Bentley Squier v. Commissioner, 13 B. T. A. 1223.



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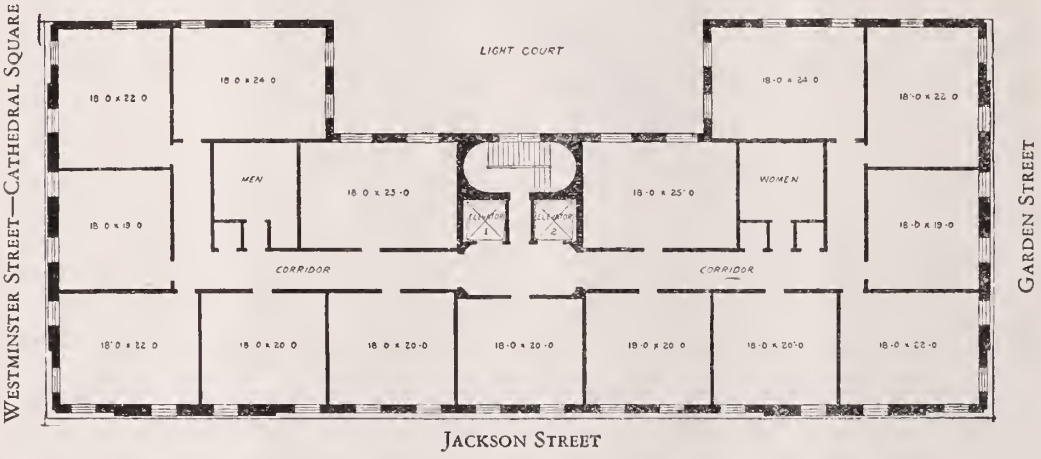
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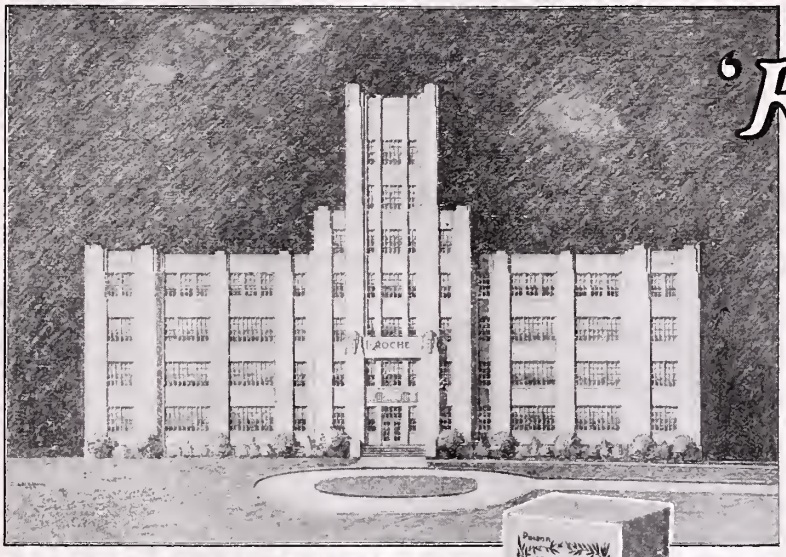
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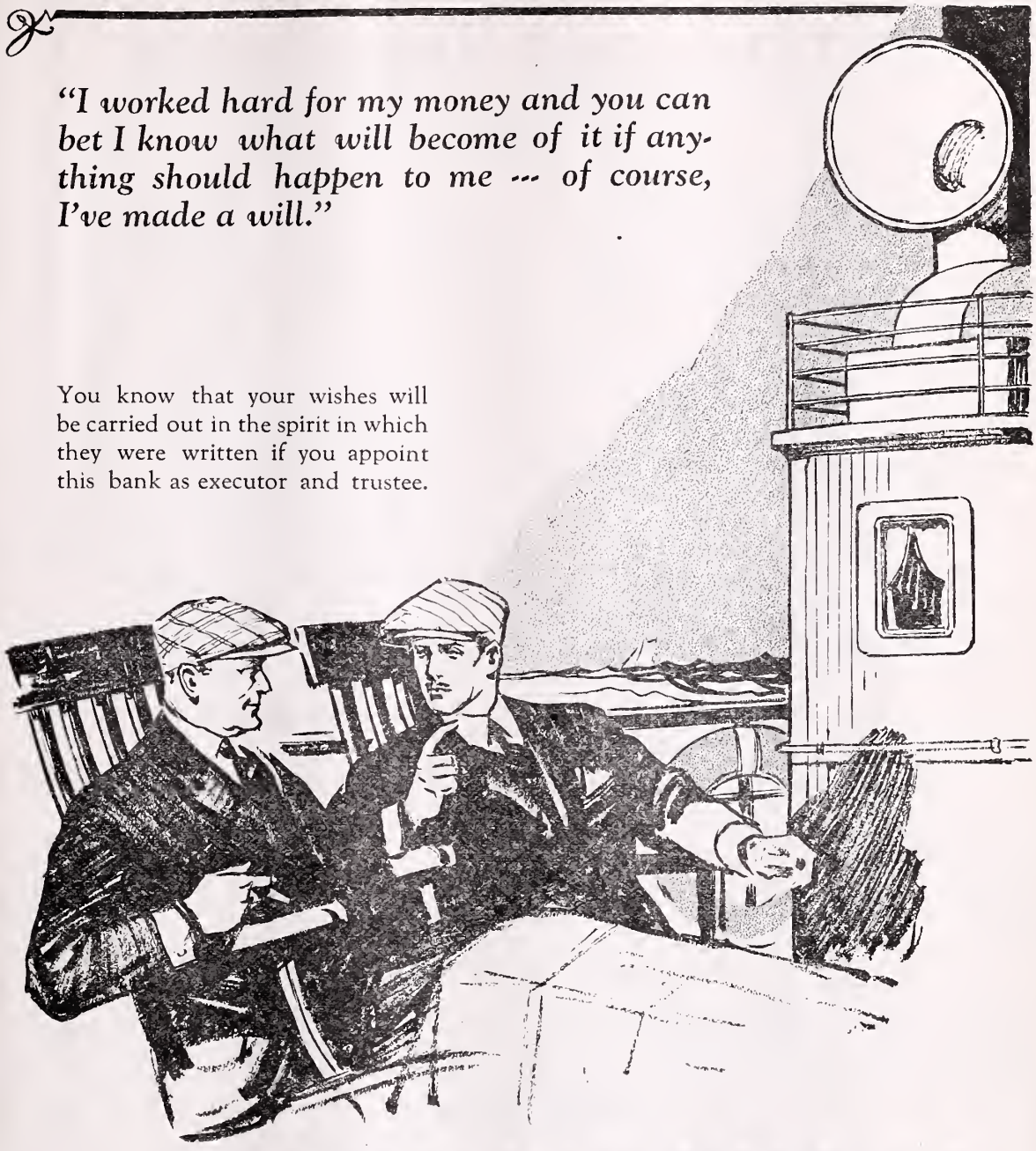
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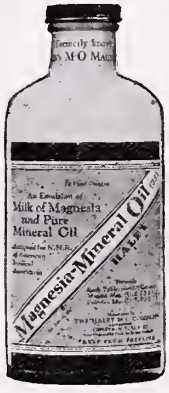
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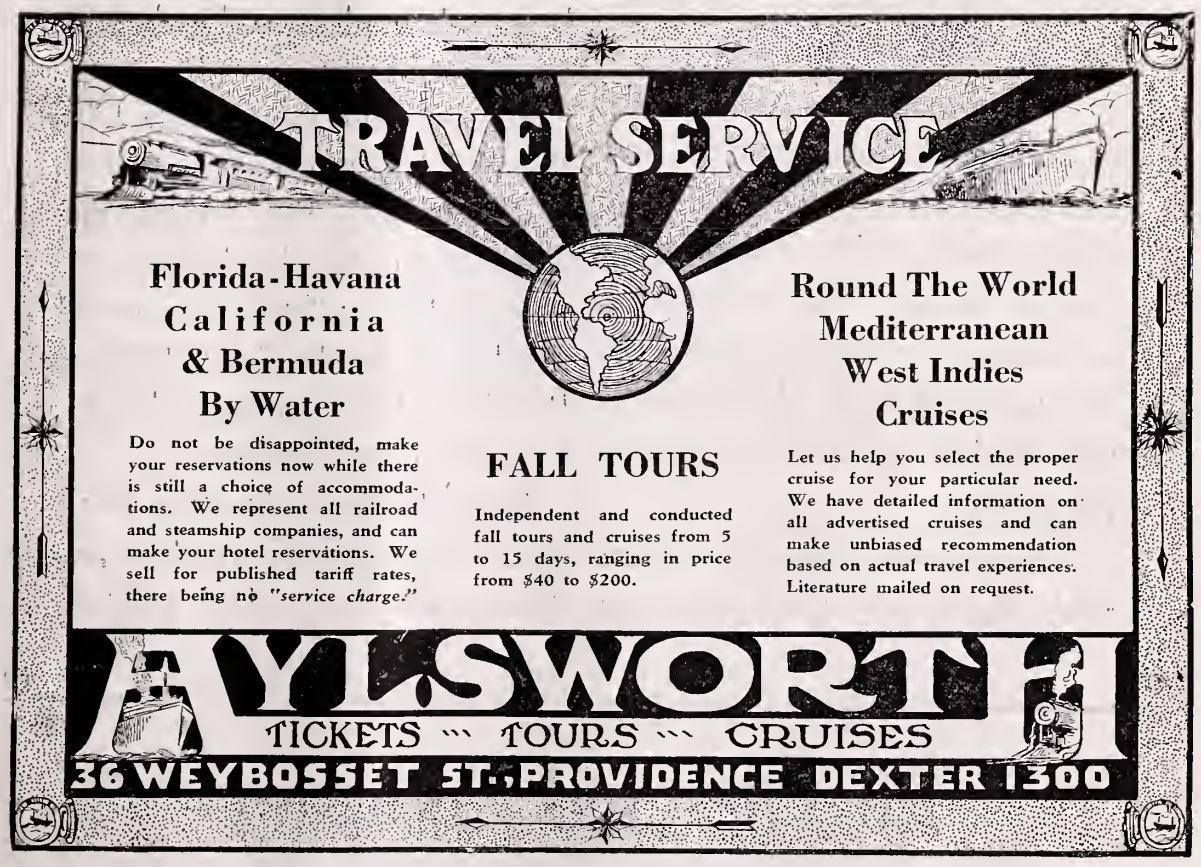
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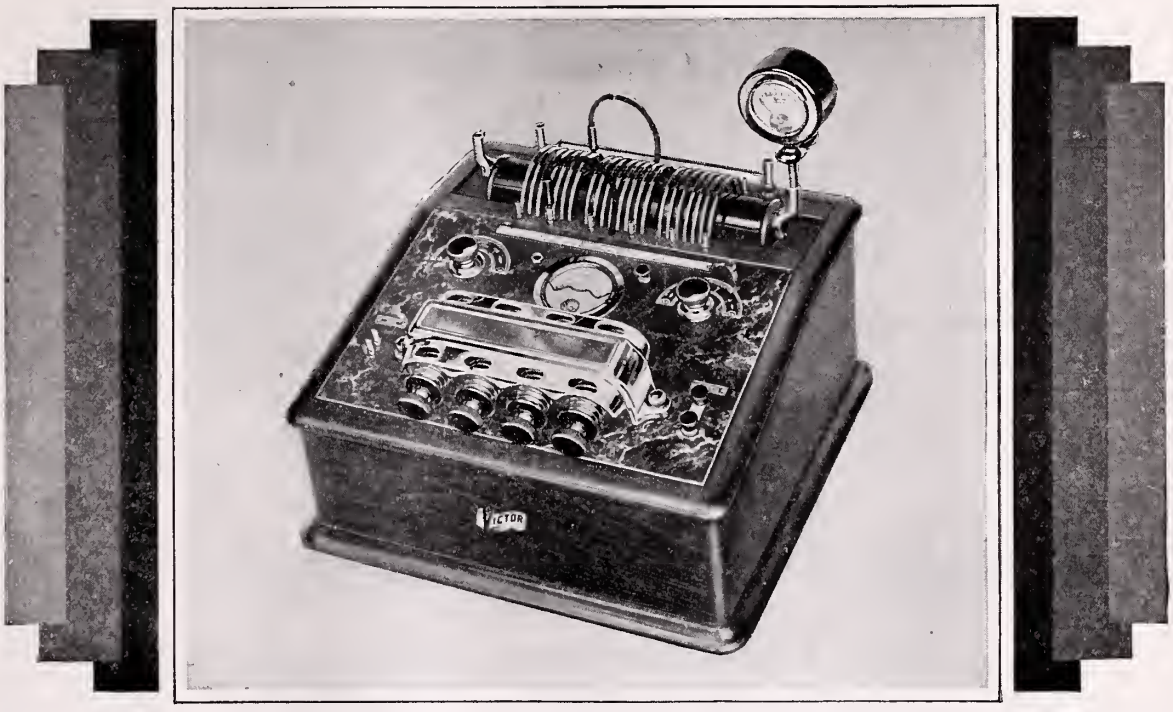
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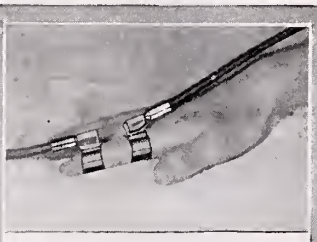
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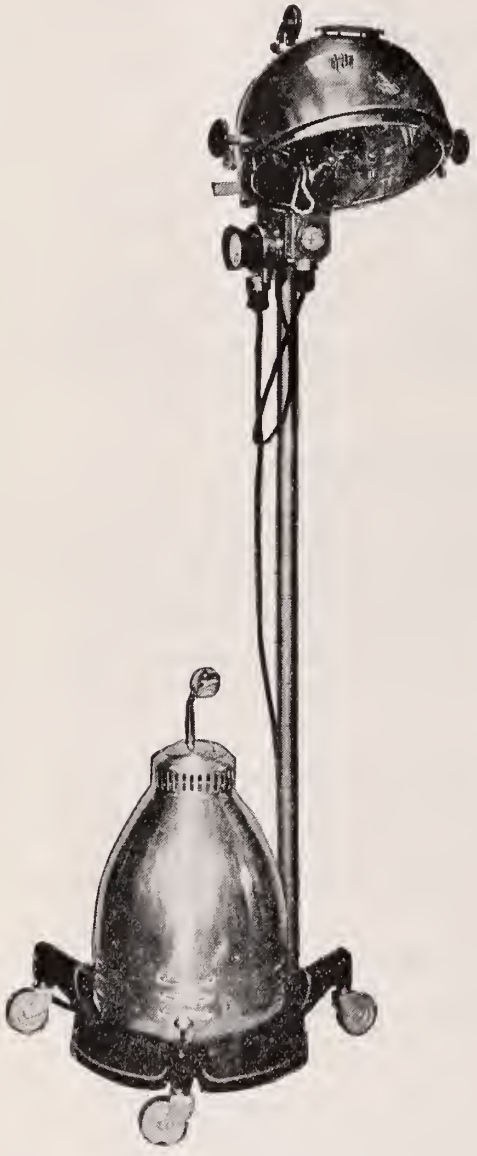
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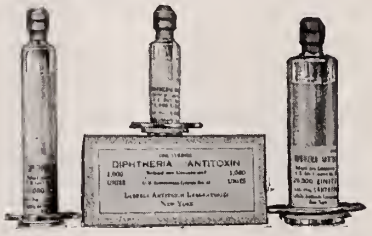
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ORIGINAL ARTICLES

THE KETOGENIC DIET IN EPILEPSY.*

WILLIAM NEWTON HUGHES, A.M., M.D.
Providence, R. I.

For decades various modifications of diet have been used in the treatment of epilepsy. Certain combinations and restrictions in diet have helped a few cases, but the number improved was very small until a few years ago, when fasting and, later, the so-called ketogenic diet began to be used. Since that time it has been definitely proved that fasting tends to prevent epileptic seizures in more cases than any known modification of the diet other than that producing ketosis. Absolute fasting which can, of course, only be used temporarily is of value chiefly during periods of many seizures, since attacks recur in a few days or weeks after the fast has ended. The ketogenic diet can be continued indefinitely, as far as we know at the present time, and seems to control the seizures essentially as well as fasting. It produces much the same profound metabolic changes which occur in the body during fasting.

The ketogenic diet produces ketosis or the formation of acetone, aceto-acetic acid, beta-oxybutyric acid, etc., in the body through decrease in the carbohydrate and protein in the diet and increase in the fat. There is not enough carbohydrate to completely oxidize the fat and so the ketosis occurs. In more technical language ketosis occurs when the ketogenic factors, chiefly fat, in the diet are two or more times the antiketogenic factors, chiefly carbohydrate and protein. The ketosis is believed by Dr. William G. Lennox[1] of Boston to relieve the seizures through producing a decrease in the irritability of the nerves. Ketosis produced by ammonium chloride or calcium chloride or by breathing mixtures high in carbon dioxide will also prevent epileptic seizures in apparently the same way as the ketogenic diet.

The ketogenic diet is usually started with the ketogenic factors, chiefly fat, one and one-half times the antiketogenic factors, chiefly carbohydrate and protein. The diet is made more ketogenic by gradually increasing, every week or so, the proportion of the ketogenic to the antiketogenic factors as follows: 2:1, 2.5:1, 3:1, 3.5:1, 4:1 until the 4:1 diet is reached. This 4:1 diet I have continued as nearly as possible for several months. The sodium nitroprusside test for ketosis becomes positive in the urine at about the 2:1 combination and the ferric chloride test for ketosis becomes positive at the 2:5 or 3:1 combination in hospital patients. The 4:1 ketogenic diet was usually reached before the urine became Burgundy red in the ferric chloride test in ambulatory cases probably because these cases secured more food in addition to their diet than hospital patients did. The protein on the diet is kept as high as possible so as to supply the necessary assortment of amino-acids for growth and repair, and the weight and general condition of the patient is carefully followed.

I have made the diets in many cases ketogenic for each meal, and feel that it is better than the usual procedure of making them ketogenic for the day. Since each meal is ketogenic, the different meals of the same ketogenic, antiketogenic ratio can be combined by the patient to give variety provided that the total caloric intake is sufficient to maintain and increase body weight. For example, the various meals in the 4:1 ketogenic-antiketogenic diets which follow later in this paper can be combined as desired. The slight difference in protein intake during such combinations has not seemed to make any difference, as body weight has been maintained or increased easily.

All the food for each meal is weighed by the patient or parent and all of it must be eaten. No food other than that on the diet is taken, and the child is watched carefully by parent, teacher, or companions to see that he does not eat any thing

*Read before the Staff of the Homeopathic Hospital, Providence, R. I., April 15, 1929.

[1]Lennox, W. G.: Ketogenic Diet in the Treatment of Epilepsy, N. E. Journ. Med. Vol. 199, No. 2: PP74-75, July 12, 1928.

between meals. An apple, a few grapes, or a piece of candy changes very quickly the ketogenic-antiketogenic constituents of the diet and seizures are at once precipitated. Olive oil is usually more easily taken than butter, but butter is taken much more readily when flavored cellu wafers can be used to put it on.

A few samples of diets actually used for the case reported later in this paper follow:

KETOGENIC DIET 2:1.

Carbohydrate, 48.8 grams.
Protein, 28.7 grams.
Fat, 155.8 grams.
Calories, 1712.

	C	P	F	Total Calories
Breakfast				
15 grams cornflakes	11.8	1.1		52.
20 grams bacon		3.3	10.	105.
60 grams 40% cream	2.	2.	24.	232.
180 grams grapefruit or 90 grams 10% fruit	6.	3.		36.
15 grams butter			12.5	112.
Bran cakes				
Cocoa shells				
	19.8	9.4	46.5	537.
Dinner				
Broth				
18 grams lean meat		4.8	3.	46.
60 grams 5% vegetables	2.	1.		12.
60 grams 40% cream	2.	2.	24.	232.
120 grams grapefruit or 60 grams 10% fruit	4.	2.		24.
22 grams butter			18.3	165.
D-Zerta				
10 grams olive oil			10.	90.
	27.8	19.2	101.8	1106.
Supper				
Broth				
120 grams 5% vegetables	4.	2.		24.
60 grams 40% cream	2.	2.	24.	232.
15 grams cheese		4.	5.5	65.
25 grams butter			23.	207.
3 Uneedas	15.	1.5	1.5	78.
	48.8	28.7	155.8	1712.

KETOGENIC DIET 2.5:1.

Carbohydrate, 27 grams.
Protein, 39.6 grams.
Fat, 166.1 grams.
Calories, 1762.

	C	P	F	Total Calories
Breakfast				
1 egg		6.	6.	78.
30 grams 40% cream	1.	1.	12.	116.
10 grams bacon		1.6	5.	51.
60 grams grapefruit	2.	1.		12.
36 grams butter			30.	270.
Bran cakes				
Cocoa shells				
15 grams bread	9.	1.5		42.
	12.	11.1	53.	569.
Dinner				
Broth				
30 grams lean meat		8.	5.	77.
60 grams 5% vegetables	2.	1.		12.
30 grams 40% cream	1.	1.	12.	116.
32 grams butter			26.6	240.
10 grams olive oil			10.	90.
D-Zerta				
15 grams bread	9.	1.5		42.
	24.	22.6	106.6	1146.
Supper				
Broth				
60 grams 5% vegetables	2.	1.		12.
30 grams 40% cream	1.	1.	12.	116.
34 grams cheese		9.	12.4	148.
35 grams butter			29.1	262.
1 egg		6.	6.	78.
	27.	39.6	166.1	1762.

KETOGENIC DIET 3:1.

Carbohydrate, 13.5 grams.
Protein, 41.6 grams.
Fat, 168.1 grams.
Calories, 1734.

	C	P	F	Total Calories
Breakfast				
1 egg		6.	6.	78.
30 grams 40% cream	1.	1.	12.	116.
10 grams bacon		1.6	5.	51.
60 grams grapefruit	2.	1.		12.
36 grams butter			30.	270.
Bran cakes				
Cocoa shells				
	3.	9.6	53.	527.
Dinner				
Broth				
30 grams lean meat		8.	5.	77.
60 grams 5% vegetables	2.	1.		12.
30 grams 40% cream	1.	1.	12.	116.
32 grams butter			26.6	240.
10 grams olive oil			10.	90.
D-Zerta				
90 grams milk	4.5	3.	3.	57.
	10.5	22.6	109.6	1119.
Supper				
Broth				
60 grams 5% vegetables	2.	1.		12.
30 grams 40% cream	1.	1.	12.	116.
34 grams cheese		9.	12.4	148.
35 grams butter			29.1	262.
30 grams lean meat		8.	5.	77.
	13.5	41.6	168.1	1734.

KETOGENIC DIET 3.5:1.

Carbohydrate, 16 grams.
Protein, 37.1 grams.
Fat, 187.1 grams.
Calories, 1897.

Breakfast	C	P	F	Total Calories
1 egg		6.	6.	78.
30 grams 40% cream	1.	1.	12.	116.
10 grams bacon		1.6	5.	51.
60 grams grapefruit	2.	1.		12.
36 grams butter			30.	270.
Bran cakes				
Cocoa shells				
	3.	9.6	53.	527.
Dinner				
Broth				
30 grams lean meat		8.	5.	77.
60 grams 5% vegetables	2.	1.		12.
30 grams 40% cream	1.	1.	12.	116.
32 grams butter			26.6	240.
31 grams olive oil			31.	279.
D-Zerta				
15 grams bread	9.	1.5		42.
	15.	21.1	127.6	1293.
Supper				
Broth				
30 grams 40% cream	1.	1.	12.	116.
34 grams cheese		9.	12.4	148.
35 grams butter			29.1	262.
1 egg		6.	6.	78.
	16.	37.1	187.1	1897.

KETOGENIC DIET 4:1.

Carbohydrate, 9 grams.
Protein, 41.6 grams.
Fat, 203.1 grams.
Calories, 1931.

Breakfast	C	P	F	Total Calories
1 egg		6.	6.	78.
30 grams 40% cream	1.	1.	12.	116.
10 grams bacon		1.6	5.	51.
60 grams grapefruit	2.	1.		12.
36 grams butter			30.	270.
Bran cakes				
Cocoa shells				
	3.	9.6	53.	527.
Dinner				
Broth				
30 grams lean meat		8.	5.	77.
60 grams 5% vegetables	2.	1.		12.
30 grams 40% cream	1.	1.	12.	116.
32 grams butter			26.6	140.
25 grams olive oil			25.	225.
D-Zerta				
1 egg		6.	6.	78.
	6.	25.6	127.6	1175.
Supper				
Broth				
60 grams 5% vegetables	2.	1.		12.
30 grams 40% cream	1.	1.	12.	116.
34 grams cheese		9.	12.4	148.
35 grams butter			29.1	262.
30 grams bacon		5.	15.	155.
7 grams olive oil			7.	63.
	9.	41.6	203.1	1931.

KETOGENIC DIET 4:1.

Carbohydrate, 10.
Protein, 45.
Fat, 220.1.
Calories, 2097.

Breakfast	C	P	F	Total Calories
30 grams 40% cream	1.	1.	12.	116.
15 grams bacon		2.5	7.5	78.
90 grams grapefruit	3.	1.5		12.
15 grams cheese		4.	5.5	66.
22 grams olive oil			22.	198.
30 grams butter			25.	225.
1 egg		6.	6.	78.
Bran cakes				
Cocoa shells				
	4.	15.	78.	773.
Dinner				
Broth				
60 grams fish		12.		48.
30 grams 10% vegetables	2.	.5		10.
30 grams 40% cream	1.	1.	12.	116.
32 grams butter			26.6	140.
25 grams olive oil			25.	225.
D-Zerta				
	7.	28.5	141.6	1312.
Supper				
Broth				
2 eggs		12.	12.	156.
60 grams 5% vegetables	2.	1.		12.
30 grams 40% cream	1.	1.	12.	116.
15 grams bacon		2.5	7.5	78.
22 grams olive oil			22.	198.
30 grams butter			25.	225.
	10.	45.	220.1	2097.

In addition to this diet I give each patient a list of products from the catalogue of the Chicago Dietetic Supply House, Inc., which can be used to advantage with the ketogenic diet. Many of these products, such as cellu bran breakfast food, cellu chewing gum, cellu sugar free gum drops, root beer, ginger ale, and wild cherry, D-Zerta, cellu mayonnaise salad dressings, cellu bran wafers, bran agar-agar wafers, cellu cocoa nibs, cellu sugar free flavors, cellu sugarless sweetener, cellu vegetable food colorings, cellu agar jelly, and cellu India gum, can be added to the diet at any time as they are practically without food value. Other products or recipes in the catalogue such as the canned 5% and 10% vegetables and fruits, the dehydrated 5% vegetables, the corn bran muffins, the soy bean muffins, the cellu flour bread, the tomato bouillon, the beef soup with okra, and the chicken broth with egg can be figured in the diet for the patient if it is desired. Cellu chocolate

wafers, cellu cheese wafers, cellu almond wafers, and chocolate sauce can be used once a day without interfering with the ketogenic-antiketogenic factors in the diet. The Cellu products and recipes as listed in the catalogue of the Chicago Dietetic Supply House, Inc., has proved of great value in varying the monotony of the high fat diet and in securing a diet in some respects more like the diet of the normal boy or girl. They add expense to an already expensive diet, but when they can be secured, they make the diet much easier for patient, mother, and doctor.

I have the patient or parent examine the urine daily with the ferric chloride test and record any seizures that may occur. I do not at present have the sodium nitroprusside test done daily, as I did not get constant improvement in seizures until the ferric chloride test became Burgundy red.

Constipation is troublesome at times, but can usually be relieved by mineral oil, magnesium sulphate, or bitter fluid extract of cascara. After a short time the patients usually get used to the diet and constipation is no longer annoying. The large amount of fat in the diet seems to act as a mild laxative.

Calcium lactate in doses of one teaspoon three times a day is usually given to replace some of the calcium known to be excreted on a high fat diet. Children object to it, but generally it can be taken without too much distress, if some of it is given in powder form on the food and some of it in aqueous solution.

Phenobarbitol or bromides may be given with the ketogenic diet if it is desired.

The following case (BH) has been treated by the ketogenic diet and luminal[2] grains ¼ three times a day since June 26, 1928 when she was nine years old, 54 inches tall, and weighed 64¾ pounds. Since the age of five years she has had petit mal seizures which for the past few years have been about ten to fifteen daily. She has never had a grand mal attack. No satisfactory cause for the seizures has ever been found, although she has been studied thoroughly by several excellent physicians. The X-rays of her head, the examination of her spinal fluid, her basal metabolism, her blood studies, and her gastro-intestinal series were all normal. She had been put on various diets and drugs with essentially no improvement except when fasting and the ketogenic diet were used for a short time. Her mother had never felt that the child was well enough to attend school because of these attacks; but since January 1929 the child has attended the public schools without any attack being noted at school. The petit mal seizures have been cut down by the ketogenic diet from ten to fifteen daily to none or at the most to four or five. Her mother at the present time is not sure whether the attacks she now records are really seizures or products of her own expectation. The child looks well, acts well, and seems to be growing normally. Her weight has increased to 74 pounds, which is slightly above average weight for her age and height; her bowels function adequately, and her physical condition is entirely satisfactory. She does very well at school, and in the afternoon often drives her pony cart on the street alone.

Seizures have never been noted when the ferric chloride test has been Burgundy red, and we feel that it will be possible for her to secure even better results by continued cooperation, since her ferric chloride test is not constantly positive. No ammonium chloride or calcium chloride has yet been given her to assist in securing ketosis, but this may be done in the future, if the child does not continue to improve in her ability to follow the diet. She is getting used to it and does not object as much as previously to it, though she probably still takes food not on her diet as shown by some negative ferric chloride tests. She is still on a 4:1 ketogenic-antiketogenic diet.

As shown by this case, the ketogenic diet is of more value in children than in adults, and it certainly is able satisfactorily to control petit mal and grand mal seizures in many cases. Perhaps it works best in the petit mal type.

In one of my patients, enuresis was controlled by the ketogenic diet, before petit mal seizures were adequately controlled with drugs, and one case of enuresis without petit mal or grand mal attacks responded to the ketogenic diet, after several other methods of treatment had been tried without success.

Seizures due to organic brain disease, e. g., cerebral palsy, traumatic epilepsy, and encephalitis respond to the ketogenic diet about as satisfactorily as do the cases of idiopathic epilepsy.

[2]Since April 15, 1929 luminal has been discontinued and no increase in attacks has occurred to the present date. Oct. 1, 1929.

In adult epileptic patients[3], the diet has been tried with some success, especially in petit mal attacks which can not be adequately controlled by drugs.

In concluding my paper I wish to state my conviction that the ketogenic-antiketogenic diet, though expensive and difficult to follow, is the most satisfactory diet yet devised for the treatment of epilepsy, and is well worth all the trouble and expense necessary.

[3]Barborka, C. J.: Ketogenic Diet Treatment of Epilepsy in Adults, Jour. A. M. A., Vol. 91, No. 2: PP 73-78 July 14, 1928.

COMMON GYNECOLOGICAL CONDITIONS AND THEIR TREATMENT.*

Anthony Corvese, M. D.
Providence, R. I.

In an age of medical specialization it is well to remember that the majority of patients are first seen by general practitioners. And of no type of patient is this more true than of her who seeks relief from some gynecological condition. Marion Sims has been called the "Father of American Gynecology," yet it was but an incident in his busy country practice when he was called upon to correct a uterine displacement which a patient had sustained in a fall from her horse. That he might better see what he was about he placed her in the now universally known "Sims' position" and of his necessity devised the equally well known "Sims' speculum." No doubt many another general practitioner of that day was treating gynecological patients, but it is doubtful whether they were as efficient in any field of their endeavor. The general practitioner today enjoys innumerable advantages which Sims lacked, and it lies well within his power to care for the great majority of the ailing women who come to him for help. That he often fails to do so not only reacts to the advantage of the specializing gynecologist, but it also puts a burden upon suffering womanhood which is all too often unnecessary, and tends to lower the dignity and lessen the esteem which is the rightful due of every conscientious practitioner of medicine.

*Read before the Kent County Medical Society, April 11th, 1929.

The conditions for which gynecological consultation is most commonly sought are five: (1) Leukorrhea; (2) pain in the lower abdomen; (3) uterine hemorrhage; (4) dysmenorrhea; and (5) sterility. A comprehension of the meaning of these symptoms and the best means of relieving them should be among the attainments of every physician. It should invariably be his aim to effect this relief by the most conservative means possible; surgery being invariably regarded as a last resort.

LEUKORRHEA

Any abnormal secretion from the genital tract may be called leukorrhea. It is the most common as well as the most annoying manifestation of which gynecological patients complain. In times past it was treated either by the *laissez faire* principle or the curette was applied to the uterine endometrium. Those who opposed surgical measures prescribed douches or talked wisely about "vaginal catarrh." Today we regard temporizing measures as highly unscientific, and indiscriminate curettage of the uterus for relief of a vaginal discharge as little short of malpractice. This changed viewpoint is largely due to our wider and more accurate knowledge of genital pathology.

The first step in the investigation of a vaginal discharge is the determination of its source. The patient should be asked: Is it constant? If not, at what time does it appear? What is its character—scanty or profuse? thick and creamy? its color and odor, if any? Did it come on suddenly? after childbirth or immediately after marriage? Having received the answers to these questions, the next step is inspection of the external genitalia, a careful digital palpation of the vagina, and speculum examination of both vagina and cervix. Smears for miscroscopic examination should be taken in every case, and it is well to secure specimens from urethra and cervix separately.

Patients with leukorrhea fall naturally into four classes, according to age: Children with vaginal discharge; leukorrhea in virgins—at puberty or older; vaginal discharge in parous women, or those who have promiscuous sexual relations; and the discharge from the genital tract seen in women at the menopause or late in life.

In little girls we often see a vulvo-vaginitis set up by the gonococcus; less often the causal organism will be found to be the streptococcus,

micrococcus catarrhalis, or some other. We have still much to learn about the best methods of handling these young gynecological patients. The usual method is to cleanse the external genitalia with warm boric acid solution, dry the vagina and make an installation of 2 per cent mercurochrome, 1:1000 acriflavine or 1:500 silver nitrate, keeping the child in bed during treatment. In especially obstinate cases the cervix if inspected may show erosion. Under such conditions the cautery may be employed with advantage. Vaccines have been successfully used also, but whatever method one may employ there is no surety of permanent cure, for relapses are very prone to take place, and as it is frequently impossible to remove the child from the source of contamination, reinfection takes place with distressing frequency.

In virgins who have reached puberty or are past that age, leukorrhea may be the result of hypersecretion of the endocervical glands which is not bacterial in character, or may depend upon some constitutional factor. According to Graves, malposition of the cervix brought about by retroversion or anteflexion of the body of the uterus, is often responsible for vaginal discharge. Erosion from friction induced where the cervix comes in contact with the anterior vaginal wall, produces it, and his remedy is to practice a suspension operation upon the uterus. This is an extreme measure, and in unmarried girls, should only be performed as a last resort after all palliative measures have proved futile.

The third class of patients is much the largest, as the great majority of parous women present some degree of leukorrhea at some time during active sexual life. It is especially common among those who have promiscuous sexual relations and in women of this type the discharge is likely to be due to hypersecretion from the endocervix, or infection in the same region. Less probable causes are urethral infection, and that seated in Skene's and Bartholin's glands. Infection of the glands is not so readily diagnosed and consequently, may often be overlooked unless special care is taken in making the examination. The general view of the profession regarding endocervicitis has changed greatly during the past few years. It is now recognized that we seldom encounter endometritis and must look for the origin of leukorrhea below the internal os. Exceptions to this general rule are a hydro—or pyosalpinx, which may discharge its contents into uterus and vagina, but the discharge in these cases is sufficiently characteristic to make diagnosis fairly easy.

Gonorrheal infection is responsible for the major portion of all vaginal discharges, though very frequent causes are infection of the cervix by some other organism following laceration or unwise instrumentation. Some constitutional or even physic cause may occasionally be the underlying factor. But the gonococcus should always be under suspicion until proved absent, and if found the treatment must be efficient and thorough. When acute gonorrhea is present all instrumentation or active treatment of any kind must be strictly avoided. Mild antiseptic douches, and mercurochrome or acriflavine instillations in the vagina should constitute the treatment during the acute stage. When treatment becomes possible, it is important to remember that all blood or mucous must be removed from affected surfaces before any applications intended to eradicate the Neisserian infection are applied.

Latent gonorrheal infection is very often harbored by women who are completely ignorant of the cause of the leukorrhea of which they complain. As is well known, the organism may remain dormant for long periods and then be suddenly activated by some process which has an effect, upon the tissues of the genital tract, causing alterations in the blood supply to these parts. Menstruation sometimes acts as such an exciting agent, but it is more commonly the intervention of pregnancy and the trauma incident to labor, or the effect of a pelvic operation. Excessive sexual intercourse has at times, a similar effect.

The treatment of non-gonorrheal endocervicitis must be varied to suit the needs of the individual case. There is one type in which the cervix is smooth and very slightly hypertrophied, but on inspection the canal will be found filled with a thick, tenacious mucopurulent discharge, often completely plugging up the lumen. Diathermia has proved very useful in relieving such situations, and in the more usual type of chronic endocervicitis, cauterization ordinarily serves to relieve the annoying symptoms. Before resorting to cauterization the local application of such agents as iodine and silver nitrate, or the insertion of tampons should be tried. Even when cauteriza-

tion is to be done, such local treatment should be used in advance.

If the patient is elderly a vaginal discharge may be due merely to senile vaginitis, but after the menopause any such manifestation should be looked upon as strongly suspicious of malignancy, especially if it is irregularly stained with blood. Occasionally we may see cases of pyometria which discharge at intervals, but the great prevalence of cancer of the cervix uteri should put every physician on his guard when any elderly woman seeks his advice for the relief of "leukorrhea."

PAIN IN THE LOWER ABDOMEN

The causes of pain in the lower abdomen are very numerous and such varied factors produce symptoms which are in no way characteristic of any one condition that diagnosis is often extremely difficult. Any condition which affects the peritoneum will usually be productive of intense pain. Thus, even very large ovarian tumors will be painless except in those where torsion takes place, when the peritoneal irritation produced will be exceedingly painful. Tubal and ovarian disease are painful for the same reason, as it is doubtful whether a true ovarian neuralgia ever exists. When the patient locates the pain on the right side, and it is independent of the menstrual periods, one naturally thinks of a chronic infection of the appendix. This will have to be differentiated from tubal disease, but it must be remembered that one may be superimposed upon the other. Tubal involvement is often secondary to appendiceal inflammation.

If the patient complains of a dull continuous ache, from which she gets relief by assuming the recumbant position, it is likely to be due to varicose veins of the broad ligament. While fibroids are generally reckoned as being painless I have known of cases where they caused excrutiating pain. One patient, while sitting in my office, was seized with a most severe pain lasting several hours, and at operation this was found to be due to the presence of an intramural fibroid. The most severe pain endured by the gynecological patient is perhaps that due to the rupture of a tubal pregnancy, but except in the very earliest stages this accident is accompanied by such grave symptoms of shock and hemorrhage that it can scarcely be classed among the conditions included in my subject.

Stricture of the ureter has during the past decade or more, received a great deal of attention as a fountain-head of "female complaints." While it undoubtedly accounts for many lower abdominal pains for which no other explanation is forthcoming, I do not reckon it as being of as great importance as constipation, an ailment from which at least nineteen out of every twenty patients who seek the gynecologist, will be found to be suffering. The complaint will ordinarily be of pain low down on the left side of the abdomen, the relaxed perineum being responsible for the "dragging down pain" of which so many complain.

In treating these patients a carefully taken history is of prime importance. When we learn of a recent miscarriage, or a full-term puerperium with rise of temperature, a puerperal infection may be surmised; if there has been a supposedly normal pregnancy during which there was bladder disturbance and profuse vaginal discharge, a search for the gonococcus had best be made. When bimanual examination reveals masses or fulness on one or both sides, and the uterus is fixed, either with or without tenderness, tubo-ovarian disease is overwhelmingly indicated. Even when no mass can be palpated it should be recalled that the adhesions which rendered the uterus immobile had their origin in an inflammatory process. If the ovaries prove to be inflamed or cystic we may look for an associated inflammation in the tubes. The findings of palpation cannot always be relied upon; not infrequently one may encounter a so-called "vanishing cyst." I have found one as large as a tangerine at one examination, and several weeks later could detect no trace of it. Such cysts are probably connected in some way with menstruation.

In ministering to these cases of abdominal pain, it will be found that—given time enough—most of the puerperal ones will right themselves. The "frozen pelvis" of the original examination will be surprisingly normal after six months or a year. Correction of local conditions such as constipation, and attention to the patient's general systemic condition are often all that is needed to effect complete cure. Acute salpingitis should be handled by complete rest in bed, hot vaginal douches under low pressure, milk injections and cold applications to the abdomen to relieve severe pain. Subacute and chronic cases may be bene-

fited by local applications and tampons; medical diathermia is highly recommended, we have had, however, a limited experience with this method. If none of these measures is effective, operation will have to be considered. It has been our experience, however, that if re-infection can be avoided, most of these patients make a complete recovery and I have known conception to take place subsequently.

UTERINE HEMORRHAGE

The complaint of uterine bleeding is a very common one. It is of two kinds; *menorrhagia*—excessive menstruation — and *metrorrhagia* — bleeding independent of menstruation. In some patients the two conditions cannot be separated.

A most thorough physical examination should be made to rule out constitutional factors, and the pelvic inspection should be equally thorough, except possibly, in the case of a young girl. Often general anesthesia is desirable to permit complete relaxation for this examination. If a constitutional cause is discovered—such as myxedema, purpura hemorrhagica, anemia, disturbances of the circulation or liver, tuberculosis or syphilis—this must be attended to before any attention to the local condition can possibly be effective. Endocrine imbalance leading to ovarian dysfunction may induce uterine hemorrhage at any age, but is most likely to be an important factor in early adolescence or at the menopausal period. For the excessive menstruation of young girls conservative measures should always be used in treatment. Glandular therapy has proved of benefit; Graves recommends pituitary gland extract in 1 cc. doses; we have used sistomensin with some success. Ultra-violet rays, which increase the blood calcium are beneficial, and in severe cases, blood transfusion has served to preserve life. Of late radium in small dosage has been highly recommended, but in employing any form of radiation the great probability of sterilizing these young patients must be carefully reckoned with beforehand.

In older women the hemorrhages of pregnancy are always to be suspected. A very early abortion may be quite unsuspected by the patient herself. In such cases curettage will serve not only to establish the diagnosis but to effect a cure as well. *All products of curettement should be carefully examined.* Submucous fibroids are a source of profuse and continuous bleeding, for which, until recently, surgical removal seemed the only remedy. Of late radium has been successfully used to combat both menorrhagia and metrorrhagia, and in women to whom the possibilities of future childbearing were of no especial importance, it has become the most reliable and efficient means of treatment. For younger women operation is generally to be preferred.

At or after the menopausal age endometrial hyperplasia may be a cause of uterine bleeding. Here curettage may usually be employed to advantage, all the material obtained being carefully scrutinized to rule out malignancy. Radium may be serviceable here also, but it should be an invariable rule to suspect malignancy in every case of uterine bleeding in a woman near or in the "cancer age" and to employ no local measures until it is definitely known whether or not malignancy exists. As carcinoma of the cervix has often been reported in women under thirty, and even in young girls, these precautions should be applied to practically all cases, but they become a thousand-fold more urgent as age advances. Inasmuch as uterine cancer is curable if taken early enough, it rests with the practitioner who first sees the patient to do his share toward lessening the present frightful mortality from this disease.

DYSMENORRHEA

Pain at the menstrual period is a very frequent complaint among women, and while it can often be postulated as an exacerbation of a chronic pelvic disorder producing painful symptoms—such as salpingitis, appendicitis, ovarian cysts or ureteral stricture—again it may be difficult or impossible to decide upon the precise cause of the dysmenorrhea. To this second class the convenient "cloak for ignorance"—*essential* is the term applied. We can only theorize concerning its etiology. Young girls with poor body poise are undoubtedly more subject to painful "periods" than others. Such anatomical defects as malposition of the uterus, hyperplasia, cicatricial bands at the internal os, or hypertrophy of the endometrium, undoubtedly contribute toward dysmenorrhea. The increase of active exercise and time spent out of doors by women during the past quarter century has tended to lessen the incidence of the complaint. In my personal experience two cases have been seen wherein the cause of the

pain at the menstrual period was undoubtedly due to congenital lues. I have never seen any mention of this etiologic factor in textbooks. Not a few high authorities regard all such manifestations as of psychoneurotic origin, but I am not satisfied by any explanation so far forthcoming as to which condition is primary—the dysmenorrhea or the neurosis.

Treatment for the majority of cases is still the time-honored hot-water bottle, catharic and analgesic regime. Novak uses atropine with aspirin, and a combination of luminol and pyramidon for severe cases. Glandular therapy between the periods is often useful and the much vaunted results of galvanism and diathermy would seem to have a rational therapeutic basis. If none of these measures is effective, we may in extreme instances, have to resort to operative treatment. Graves claims 60 per cent relief by the simple expedient of dilatation and curettage. I have found the stem pessary has a decided, although limited, usefulness, despite the very general prejudice against it. None of these measures are desirable in virgins, and often only marriage will solve their difficulties. Hunner has claimed "miraculous" cures of dysmenorrhea by dilatation of the ureters. Certainly ureteral stricture ought to be considered in obstinate cases, though one may discount to a certain extent, the enthusiasm which offers this as a universal panacea for feminine ills.

STERILITY

Sterility has received a large measure of medical attention during the past decade, a fact attested by the volume of literature now available upon the subject. Whereas formerly it was universally conceded that it was invariably the woman who is "barren," modern research and experimentation has demonstrated that the male partner is at fault in at least a third of the childless marriages. No nulliparous woman should be subjected to any searching examination until it has been established beyond a doubt that her husband is physically capable of procreation. The methods of ascertaining this are now well understood but a description of them is outside the limits of my subject. If the man is found physically fit, the woman should then be subjected to a searching general and gynecological examination to determine if possible the factors preventing fecundity. Marked anomaly of the external genitals is a rare finding, as women so aflicted are usually in no doubt as to the reason of their unfruitfulness. Infantile uterus and adnexa are more likely to be discovered as their existence is not so readily appreciated. Some common local causes operative to a greater or less degree in sterility are a highly acid vaginal secretion; endocervicitis, uterine fibrosis, chronic salpingitis and an acutely anteflexed uterus with "pin-point" os.

Should none of these conditions be in evidence, resort may be had to the tests for tubal patency, together with X-ray examination after injection of iodized oil. It need hardly be added that none of these tests can be undertaken if the examination has shown that pelvic inflammation is present. If it is permissible to use the tests, it is generally possible to determine definitely if occlusion of the tubes exists, and we are also often placed in possession of information as to the location of the occlusion and the chances of operative relief. A persistent corpus luetum cyst may be the cause of failure to conceive.

It is often asserted that obesity and amenorrhea are the *cause* of sterility. This is inexact, for these manifestations are *effects* of the same factors which are responsible for infecundity. This is probably true also of a number of conditions looked upon as *psychic* causes of sterility, such as frigidity and sexual incompatibility. Much has recently been published regarding diet as a factor in productiveness, but it is well to bear in mind that what is perfectly true of a caged white rat may not have any bearing whatever upon the family problems of a free white woman. There is much more to be said of endocrine disturbances, particularly hypothyroidism and ovarian hypoplasia, though here too, we are leaving established fact for the uncertain ground of theory. Yet it is undeniable that glandular therapy has often seemed to be effective, and in definite cases of hypothyroidism, for example, correction of the endocrine imbalance has been followed by conception. Constitutional diseases, diabetes, nephritis and perhaps some other conditions, are likely to render a woman unfit for conception.

In treating patients who complain of sterility the psychic factor looms very large. If the organs of generation are apparently normal, or even if they show some slight variations which will still admit the possibility of the conjunction of the ovum and the sperm, there is always a chance that

the woman may conceive and the examining physician should never tell her that it is impossible. Neither should he be too optimistic as to the results of treatment. But a generally hopeful attitude on the part of both physician and patient should be maintained throughout. The treatment selected must be suited to the conditions found. Highly acid vaginal secretions may be neutralized by taking an alkaline douche before coitus; suitable local treatment should be employed to reduce pelvic inflammation. Mechanical obstructions, such as tumors, can frequently be removed with satisfactory results, and a diseased cervix receive local medication or cauterization. Dilation and the judicious use of the stem pessary (condemned by many writers) often help infantile organs and the acutely anteflexed uterus, if undertaken when no pelvic inflammation is present. Galvanism and diathermia are said to do good in certain selected cases of this kind, and repeated small dosage of X-ray will serve to stimulate inert ovaries. With X-ray we have had no dependable experience.

If patency tests show occlusion of the tubes, especially when the occlusion is near the fimbriated end, there is a good chance of operative relief, if the woman is willing to undergo a laparotomy. The physician however, should be careful not to guarantee relief from childlessness. Too many other factors may be related to the one which can be positively demonstrated to make it possible to be even reasonably positive. Yet the plight if these patients is so pathetic, and their gratitude so unbounded if one is fortunate enough to be able to help them, that every physician should be urged on to leave no measure untried which offers any hope of success. I can think of nothing which can offer him any greater satisfaction than having assisted in thus serving the natural and legitimate demands of both the individual and the state.

ANNOUNCEMENTS

TO THE COUNSELLORS OF THE RADIOLOGICAL SOCIETY OF NORTH AMERICA

"The next meeting of the Radiological Society of North America will be held at Toronto, December 2nd to 6th, inclusive. Headquarters will be at the Royal York Hotel. The facilities and accommodations at this hotel are the best in the history of the Society and we expect to have a banner meeting in every way. The Scientific Program, Clinics, Scientific and Commercial Exhibits will be of the highest character and exceedingly interesting and instructive. The program will be interesting not only to the Radiologists but to the Physicians practicing other medical specialties and general practice as well. A cordial invitation is extended to all physicians as well as Radiologists to attend the Toronto Meeting. Secure reservations at once through Dr. W. C. Kruger or Dr. G. R. Reid, 20 College Street, Toronto, Canada. Excellent arrangements have been made to take care of the visiting ladies."

I feel sure that I can depend upon you to cooperate with me in this matter. Our idea will be to get the information out as much as possible among the men in other specialties of general medicine. If we can get the general medical man and other specialists to the meeting it will not only swell our attendance but also stimulate interest in advancement of Radiology.

B. C. Cushway, M. D., *Chairman,*
Publicity and Educational Committee.

Dr. Chevalier Jackson of Philadelphia To Lecture at Brockton

On Tuesday, October 29th, at Massasoit Hall, 6 Main St., Brockton, Mass., at 8 P. M., Dr. Chevalier Jackson of Philadelphia, eminent Bronchoscopist will lecture to the members of the Plymouth District.

The subject of his address will be: "Bronchoscopy as an Aid to the Internist and Surgeon in the Diagnosis and Treatment of Diseases of the Lung." Lantern slides and moving picture demonstrations.

We extend a cordial invitation to all physicians, members of the Rhode Island Medical Society to be present as our guests.

Sincerely yours,

Thomas H. McCarthy,
President, Plymouth District,
Massachusetts Medical Society.

THE RHODE ISLAND MEDICAL JOURNAL

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FREDERICK N. BROWN, M.D., *Editor*
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CREIGHTON W. SKELTON, M.D., *Business Manager*
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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Henry M. Boss, Jr., President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

PHOTOGRAPHY IN MEDICINE.

Certainly one of the most "outstanding," as the announcer says about almost everything,—ideas in the mind today is the picture influence. We have found out that a picture produces as firm and lasting an imprint on the mind as almost any impact. The movies, the soon-to-be-realized television, the much discussed signboard and the increasing daily and weekly pictorials of the press are all familiar witnesses of this feature of present day life. Current medical text books and literature show this influence to a marked degree, and we venture to state that the illustrated medical page receives much more attention than that relying upon description only for its medium. Not only has photography done much for publications but it is also available for case records and histories and is to be heartily recommended to both hospitals and clinics and individuals for their records. A medical paper illustrated by lantern slides commands far more interest and attention than the story alone. Assuming that everyone keeps case records it may be of interest to improve and enrich them so that they may show

clinical features in the most striking and convincing fashion. Should the case be one of disfiguring injury, a photograph before and after repair makes a permanent record for the benefit of the patient as well as the attending physician. If it is a dermatological case, photographs taken during the course of the cure are far more convincing than descriptions. Through the recent development of the X-ray a perfection of records is now made possible that has been hitherto unknown.

It is interesting to note the ease with which this method of records and teaching may be accomplished. Almost any camera will take serviceable pictures of the skin or of gross lesions, expensive apparatus being rarely if ever necessary. Add an illuminating box and you have all that is necessary for the reduction of X-ray films. In five minutes the thing is done and be it whispered that the same solutions used in the X-ray laboratory will do for the camera photography. It is not too much to claim that the enormous success of some noted hospitals and clinics is in part due to the development of a photographic laboratory along with other scientific activities, and the same material prepared for case records is available for lecture and publication. The expense of such installation and operation is almost negligible, and the technique is readily learned. The time is not far distant when we shall see motion pictures more frequently used for the demonstration of gait and other functions following operations as well as the "animated cartoon" in medical teaching methods.

PHYSICIANS AND PUBLIC HEALTH.

Ever since the modern health movement began many physicians have lamented that public health authorities and hospitals have been taking bread out of their mouths. Gradually they have been educated to the necessity of diagnostic laboratories, to most of the regulations designed to control infectious diseases although too many are remiss in the conscientious observance of some of these regulations, and other public health measures. As a whole, however, physicians heartily are in favor of preventive measures. During recent years the conception of what constitutes public health has extended to include many matters which border on the field of private practice, such as infant welfare stations, prenatal and postnatal clinics, clinics for removal of tonsils and adenoids, and for eye examinations of school children, clinics for tuberculosis and heart disease, etc. At the same time there has been a tremendous increase in the number of patients treated in hospitals, and their outpatient departments much of which is entirely charitable. A great many physicians are very resentful because they feel that it encroaches on their domain. They are obliged to furnish the medical service in these institutions without charge.

Physicians have many just reasons to complain and yet it is extremely important that they look upon the whole problem of the prevention and treatment of disease in a comprehensive manner. It is the physican who during the last half century has demonstrated what can be done by applying scientific measures in preventing illness and curing or relieving disease. The public has been "sold" to the real value of these measures and it is clamoring for a better medical service. Morever, the people are willing to provide the necessary funds provided the cost is not too great and is properly distributed. The physician has created this situation but the movement to secure improved medical service has unfortunately fallen into the hands of illy qualified legislators and non-professional persons. Practicing physicians have too long stood by as carping critics instead of realizing the situation and offering constructive measures to meet it. For years the American Medical Association has been a severe critic and it is only in very recent years that it has begun to seriously discuss public health measures. Unfortunately there has been so much delay that the situation may now be out of hand. However, it may not be too late if physicians will only bestir themselves. The danger is that measures will be instituted which will not produce the desired results, particularly if physicians do not co-operate. As it stands today the physician is being exploited, so much of his time is being taken up by unpaid medical service. The members of no other profession contribute so much to charitable service. Many a physician has broken under the strain of private and hospital duties.

There must be ways out of this unfortunate situation by which neither the public nor the physician will suffer but they can only be discovered by careful and earnest co-operation.

The Medical Societies, state and local, are in a position to help solve the problem if their members and officers will only devote some thought and study to the problem. In Providence, a health survey has recently been conducted by a reliable national association and the Providence Medical Society has shown a very friendly and co-operative attitude in securing the data and furnishing opinions. The survey report will soon be published but the recommendations will accomplish little unless the Society further assists in putting into operation such of these recommendations as are sound and feasible. It is probable that the report of the Health Survey will carry a recommendation that the Providence Medical Society appoint a public health relations committee which would stand ready to co-operate and consult with a committee or committees which will undoubtedly be appointed to follow up the recommendations of the Survey. Such a committee of the medical society would be in a position to help safeguard the interest of private practitioners and at the same time to assist in the development of all worth while public health measures. It is quite probable that the President of the Providence Medical Society will recommend the appointment of such a committee. Obviously such a committee will carry considerable responsibility and will have many knotty problems to settle. Morever, it will be necessary that this committee should be a live one which will follow all matters relating to local health matters.

THE MEMORY

What is more remarkable than the functioning of the brain cells which control or harbor the memory, as some transient perception of childhood, hidden for fifty years, flashes upon the consciousness of an old man? Perhaps the operation of memory intensively trained along some special line may be comparable. The mathematician may unravel a long and difficult problem involving the higher branches of his art, following its sequences in his memory without the aid of pencil and paper. The organist carries in his memory the effect produced by each one of hundreds of keys when modified by a hundred stops in endless combinations, and instantly detects any variation from the normal operation of the complicated mechanism. His achievement is insignificant beside that of the great composer who writes, measure by measure, page upon page of manuscript, indicating the part which each one of a hundred instruments will take and constantly knowing not only the air which each instrument will play but the combined effect of the whole upon the ear and the mind of the listener. A great physician has taken visitors on his daily hospital round, explaining to them the history, diagnosis and treatment of every patient on a large service, without referring to notes and without missing a single important point.

The complexity of modern civilization does not tend to improve the memory. The organist has stepped down from his bench to make place for the vitaphone. The mathematician depends upon a machine for addition, subtraction, multiplication and division. The reader of many books remembers that the book of a week ago was interesting but has forgotten the story and the characters. The moving picture enthusiast remembers that yesterday's picture was a fine one and advises us to see it but has forgotten the title and what it was all about. The over-trained physician is lost without the copious notes which his secretary has set down. If we ask the business man who has returned from a 100-mile trip by automobile for the features of his trip, he describes the road bed. A great educator complains that people no longer notice things.

Is it worth while to attempt to regain the perception and attention on which memory depends or shall we continue to be more and more enslaved by our ever present and increasing aids to memory? The student should certainly be required to make from memory an abstract of every book read. If the abstract misses the important points of the narrative, the book should be reread and the abstract repeated. Perhaps it would be worth while for all of us to go more slowly and notice some of the features of the landscape.

CASE REPORT

DEATH FROM COCAINE.

By J. P. Jones, M. D.
Wakefield, R. I.

For many years cocaine has been considered dangerous when used as a local anesthetic, especially when injected. On reviewing reports from the deaths from cocaine, one finds that almost without exception the cocaine was used in a concentration greater than 0.5 of 1%. Death in the case reported here was due to the injection of 5/8 of a grain of cocaine hydro-chloride in a 0.2 of 1% solution (3v of a grains 1 to 31 solution). To each ounce of this solution 8 minims of adrenalin chloride 1-1000 had been added.

A single woman, age 31, a school teacher, was admitted to the hospital. Personal history was negative. Always enjoyed good health except for occasional attacks of tonsillitis of only moderate severity. Physical examination negative except for chronic tonsillitis. Heart, lungs and kidneys were normal. Morphine sulphate grains 1/6 and atrophine sulphate grains 1/150 were given 45 minutes before operation. With patient in a sitting position 4 injections of a 0.2 of 1% cocaine solution of 31 each were made about the right tonsil. The patient at once became very pale and nervous. On being re-assured she became quiet and behaved nicely during the removal of the tonsil. The enucleation was done slowly with scissors and two or three bleeding points were ligated after the tonsil was removed. Up to this time about 15 minutes had been consumed since the first injection. It was noticed that the anesthesia was particularly good on this day. After removal of the first tonsil 31 of the same solution was injected in the left supra-tonsillar fossa. Probably a minute was taken up after this in working on the syringe, at the completion of which it was seen that the patient was extremely pale; her head suddenly dropped forward onto her chest; respiration became short and quick but the pulse remained very good. Almost immediately after this she went into an epileptiform convulsion in which there were clonic contractions of apparently all of the skeletal muscles. She was immediately removed to the operating table where she would be in the recumbent position. The convulsion probably lasted less than one minute but by the time it was over she was deeply cyanosed. After the convulsion there was no voluntary respiratory movements until after she had had several artificial respirations. She now breathed for a minute or two but the cyanosis did not improve. The pulse was of a fair quality and not extremely rapid, probably 110 to the minute. After this short interval of breathing she had a much severer and longer convulsion followed by a long period of apnoea during which time artificial respirations were given and this was followed in turn by voluntary respirations for a period of probably two minutes. This sequence of events occurred four to five times before the patient's death which occurred about fifteen minutes after the first convulsion. The pulse remained remarkably good until after the last voluntary respiratory movement. After this the force of the heart action rapidly became weaker until the heart stopped about two minutes after the last respiratory movement. The pupils were not dilated until just before the heart stopped.

During the first few minutes after the convulsions began the patient was given 2 injections of from 0.5 to 1 cc. each of adrenalin chloride 1-1000 deep into the tongue.

Unfortunately the remaining cocaine solution was inadvertently thrown out so that no chemical examination could be made of it. A post mortem was not obtained.

THE CONVALESCENT CARDIAC CLINIC AT THE CRAWFORD ALLEN HOSPITAL

By
Robert M. Lord, M.D.

Mr. President and Members of the Rhode Island Medical Society:

About five years ago Dr. Buffum did pioneer work in establishing a heart clinic in the Children's Out Patient Department of the R. I. Hospital. He has now established many other spe-

*Read at the Meeting of the Rhode Island Medical Society, held at the Crawford Allen Hospital, Sept. 5th, 1929.

cialized clinics besides this original one. It has been my good fortune to handle this clinic for two years. After seeing a great many of these children with a varying degree of damage to the heart muscles or valves and following them outside the clinic in their homes, we felt there was a pressing need for some place where these children could get, if necessary, rest in bed and careful graduated increase in physical activity. Through the kindness and co-operation of the officials of the R. I. Hospital and the Orthopedic Staff, we have been allowed to admit a certain number of these children to the Crawford Allen Hospital. Here it is possible to have them under the close observation of nurses and we can have an accurate chart of the pulse and temperature. Most important of all, the gain in weight can be checked up frequently. In addition to this a physician visits the medical cases once every two weeks.

Of course I cannot give you gentlemen any detailed or scientific discussion on our work here at present. It is still in its infancy as we have had only 17 cases since January 1, 1929. I can however, make a few statements. So far as I remember in the 17 cases we have had no discouraging results. We have been able to increase their activity without apparent damage to the already diseased heart. We have had no cases where decompensation intervened to hold us back. All the cases have gained weight in varying degrees. But one case was discharged for lack of co-operation. In one instance, a boy named Manuel Santos, who was practically bed ridden on January 1st., we have been able to increase his physical activities so that at the present time he is able to do everything except violent exercise.

I have tried as nearly as possible to imitate the methods used at the Heart Hospital in Boston. This hospital has been very valuable as an intermediate step between the wards of the Children's Hospital and the home of the individual. It has saved many a case, I am sure, from the frequent recurrence of decompensation and has been a training ground for the individual who has a damaged heart just as Dr. Joslin's diabetic clinic has made useful citizens who have found their particular place in the world. I am not advocating the establishing of a Heart Hospital in Rhode Island because I do not believe at the present time we can hope to support it. But I do believe that there should be a place where children and adults could be sent for a varying length of time during their convalescence from acute heart disease. I firmly believe that we might avoid extensive damage to the heart and we certainly can send these patients home better prepared and trained to lead a useful life even if their sphere of activity is limited.

SOCIETIES

THE RHODE ISLAND MEDICAL SOCIETY

The regular quarterly meeting of the Rhode Island Medical Society was held Sept. 5, 1929, at the Crawford Allen Hospital upon the invitation of the Board of Trustees of the Rhode Island Hospital.

The meeting was called to order at 12 o'clock by Dr. H. L. Barnes, 2nd Vice President, who presided in the absence of the President and 1st Vice President.

The minutes of the annual meeting were read by the Secretary and approved.

The report of Dr. Henry A. Jones, delegate from the Rhode Island Medical Society to the annual meeting of the Maine Medical Association, was read and approved.

The program consisted of the following papers:

1. "The Care of Orthopedic Cases at Crawford Allen Hospital," Dr. Roland Hammond.

He cited the advances made in the last 20 years of treatment of joint and bone tuberculosis with special reference to the use of out-door life, sea-bathing, heliotherapy, etc. The paper was discussed by Doctors J. W. Keefe and H. L. Barnes.

2. "The Convalescent Cardiac Clinic at the Crawford Allen Hospital," Dr. Robert M. Lord.

This branch of the hospital has been in operation only two years and is already showing excellent results in the treatment of heart cases.

3. "Under-water Gymnastics in the Treatment of Orthopedic Diseases," Dr. Murray S. Danforth.

Following Dr. Danforth's paper outlining the advantages of under-water gymnastic treatment of residual paralyses following polimyelitis and allied disorders, Dr. Danforth demonstrated in the sea-water pool in the hospital how the paralized limbs are re-educated by these gymnastics.

On motion of Dr. Wm. R. White, duly seconded, a standing vote of thanks was extended to the Board of Trustees of the Rhode Island Hospital for their kindness in inviting the Society to hold its meeting at the Crawford Allen Hospital.

Adjournment was then taken and the Fellows gathered in the pavilion on the shore for an excellent clambake.

During the dinner Dr. J. M. Peters, superintendent of the Rhode Island Hospital, announced that the hospital had received from Senator Jesse H. Metcalf, President of the Board of Trustees of the Rhode Island Hospital, a gift of $150,000 for the erection of a Medical Staff Building at the Rhode Island Hospital.

Adjourned,

J. W. Leech, *Sec'y.*

REPORT OF DELEGATE TO THE ANNUAL MEETING OF MAINE MEDICAL ASSOCIATION

The Rhode Island Medical Society:

Having been appointed a Delegate from the R. I. Medical Society to attend the Annual Meeting of the Maine Medical Association, held June 17, 18, 19, at Poland Springs, I hereby inform you that I attended that meeting, and append herewith a few observations.

All members and delegates registered at the Poland Springs Hotel, which famous hostelry is located upon a high eminence and from which, on all sides, is presented an inspiring view of the surrounding country.

The proceedings of the Society were held in the Ricker House a short walk from the hotel.

The papers presented were replete with the latest advances of medical science and the discussions which followed the readings of these papers, were lucid, logical, and very instructive, and were read and discussed in plain English.

The meeting was conspicuous by the absence of the "cup eared," or hand-to-ear listeners in the assembly hall where the papers were read, and this was, no doubt, due to the accoustics of the hall, or to the absence of those monotone, monologue artists, who, charmed with the cadences of their own cogitation, often fail to put across the platform to a strained and listening audience, those pearls of mental wisdom which have been gleaned by them in their arduous researches.

I enjoyed the Meeting, and appreciate the honor of being a Delegate from our Society.

Respectfully,

Henry A. Jones.

POLYARTHRITIS

The result observed by Leonard G. Rowntree and Alfred W. Adson, Rochester, Minn. (*Journal A. M. A.*, July 20, 1929), in one case following sympathetic ganglionectomy and ramisectomy reveal the fact that in certain types of arthritis the sympathetic nervous system of the extremities is hyperactive, producing a marked vasamotor disturbance and profuse sweating, and possibly contributing to the spasm and atrophy of the muscles with the resultant deformities. The clinical picture is characterized by coldness of the extremities, marked sweating, tender, painful and swollen joints, and trophic changes in the muscle, skin and nails. In the case cited, all of these abnormal manifestations disappeared on release of the extremities from sympathetic control. The relief in the lower extremities was complete, lasting over a period of almost three years. Similar results were obtained in both hands following cervicothoracic sympathetic ganglionectomy, but there are still some slight residual manifestations of arthritis, slight pain and limitation of motion in both wrists. To date the results, both objective and subjective, have been astounding in this case. In the types of arthritis associated with marked bony changes, sympathetic ganglionectomy may be of little if any value; but in view of the obvious ignorance of the role of the sympathetic nerves in arthritis, the authors feel that its potentialities, even in this field, should be determined. In determining the value and limitations of sympathetic ganglionectomy in arthritis, the intelligent selection of cases obviously is of paramount importance.



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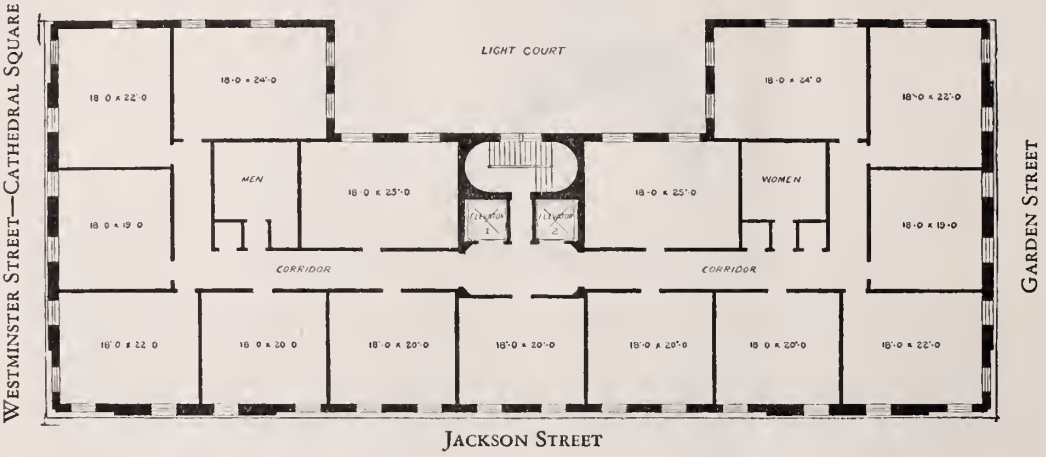
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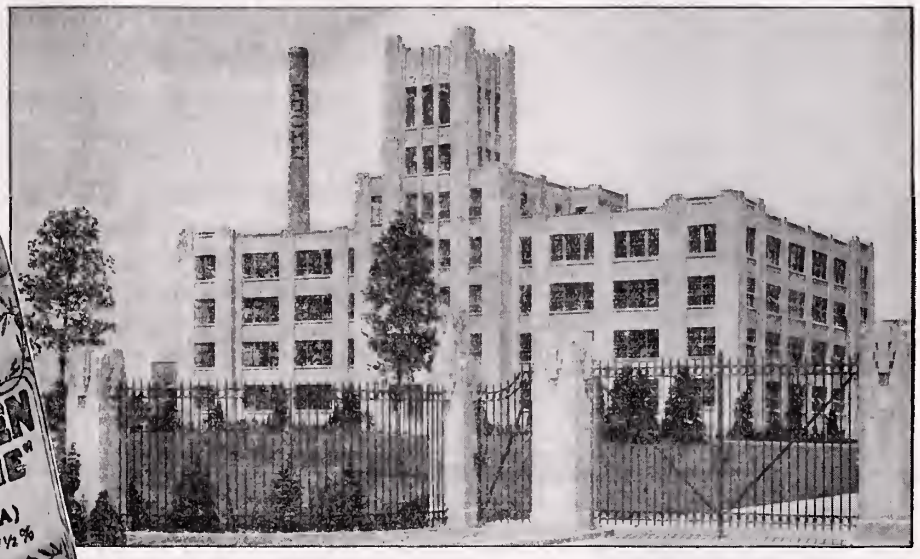
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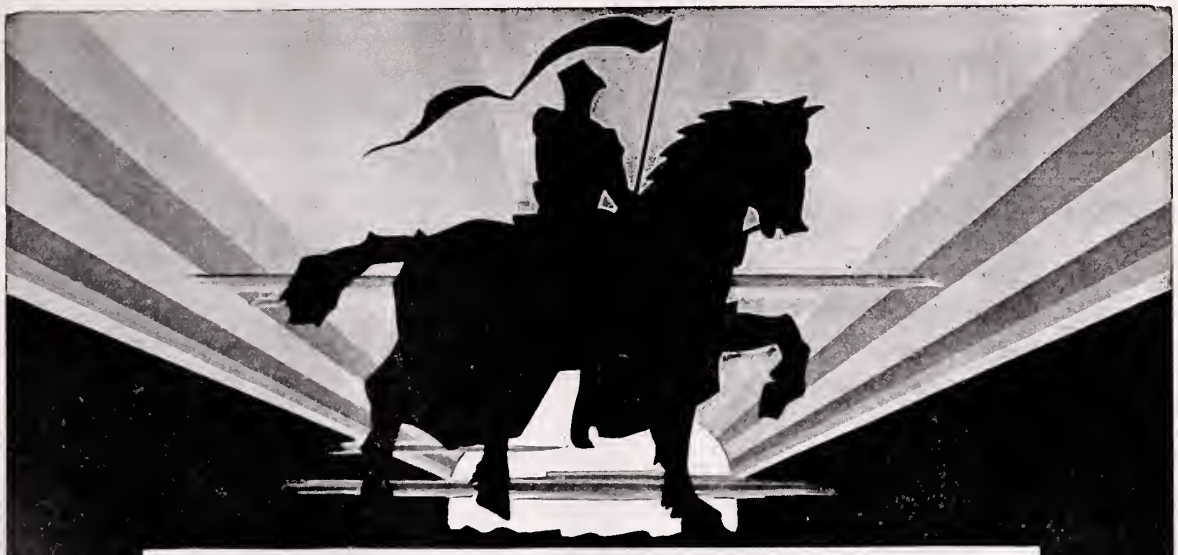
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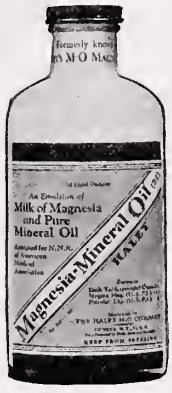
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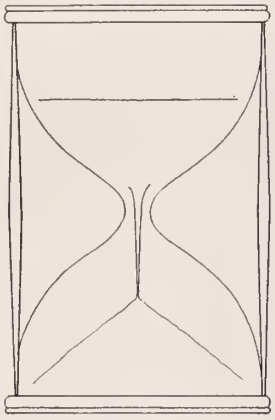
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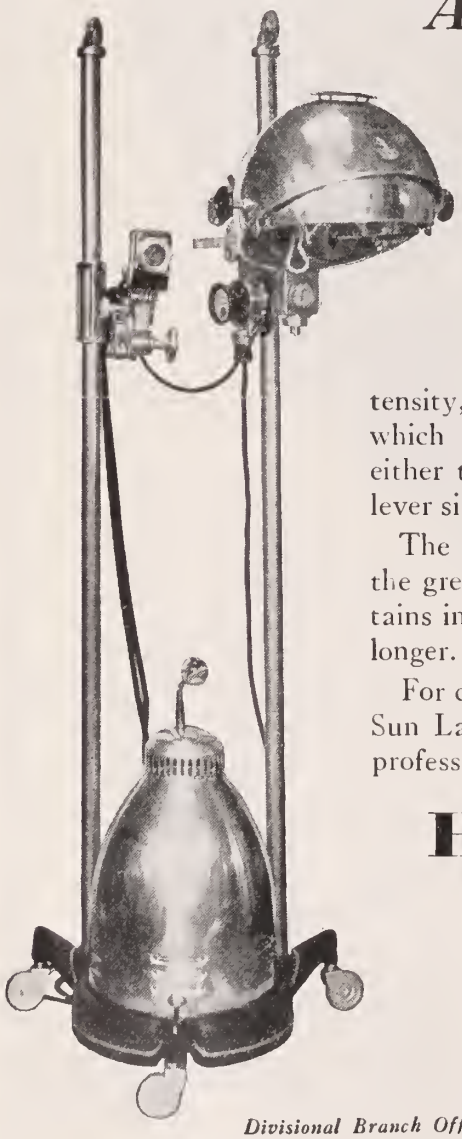


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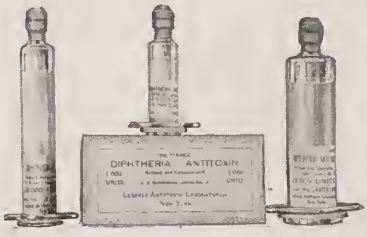
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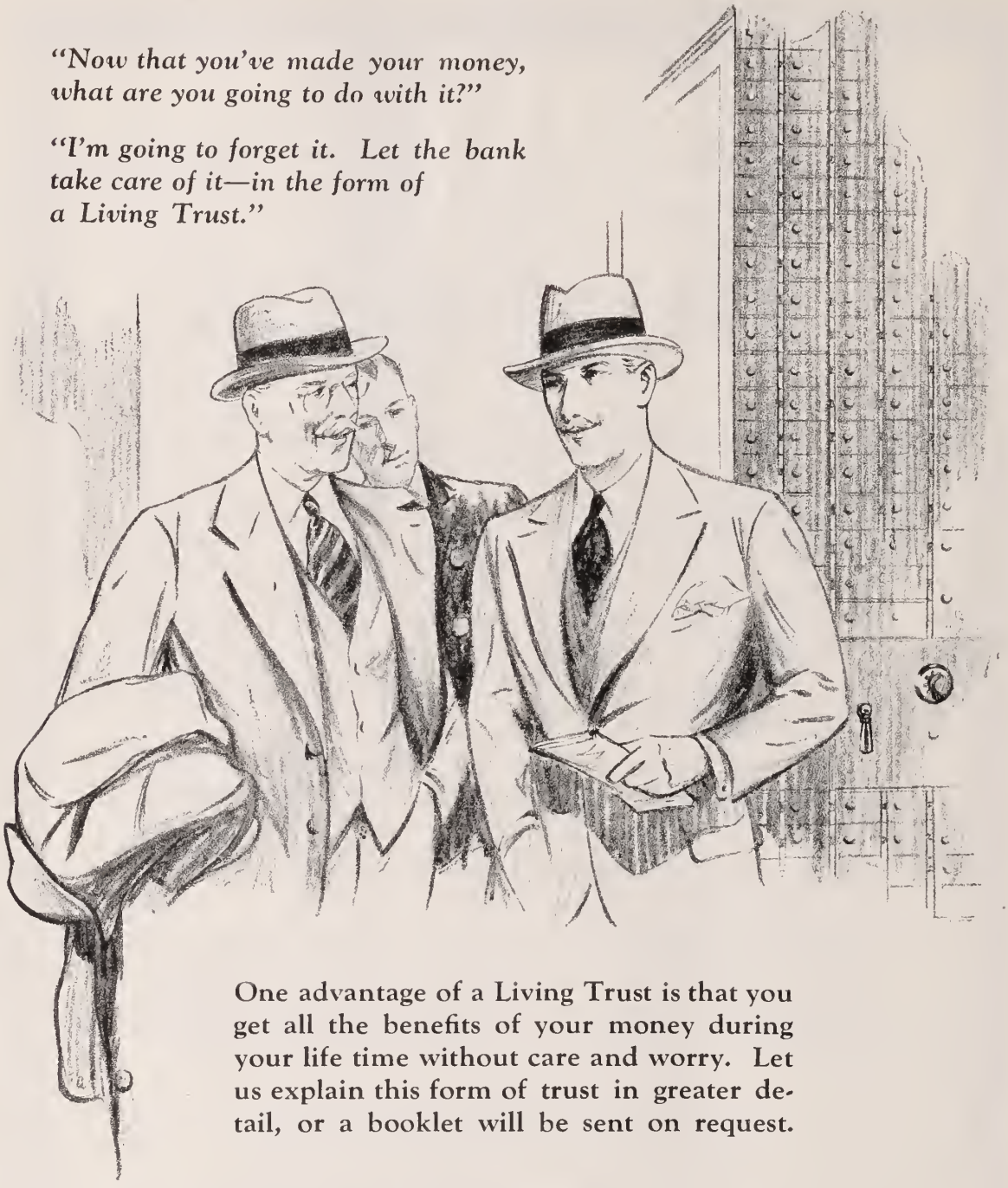
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ORIGINAL ARTICLES

THE USES OF LIPIODOL IN NEURO-ORTHOPEDIC SURGERY*

By Henry McCusker, M.D.

Providence, R. I.

In all branches of medicine there is rightly a constant striving for greater accuracy in diagnosis. Gradual improvements and newer methods in X-Ray technique are making visible various systems in the body not previously demonstrable by roentgen examination. A new procedure which presages to be of immense value in diagnostic work in many fields is the use of Lipiodol as a radiographic medium.

Lipiodol is poppy-seed oil containing about 40% of Iodine in organic combination. It is a thick, yellow, oily liquid with high specific gravity (1.350). It is opaque to X-Rays, hence its value as a contrast medium in roentgen examination. Because of its weight Lipiodol descends rapidly until it meets with an obstruction. It is well tolerated by all tissues of the body, even those of the brain, and injections of Lipiodol are not painful.

Lipiodol was first used by Sicard and Forestier in France in 1921. Recently it has been used in many branches of surgery as a diagnostic measure. I shall speak to-day only of the important applications of Lipiodol in orthopedic and neurological surgery.

In Sinuses

In discharging sinuses of bone tuberculosis or osteomyelitis it is often very difficult to determine accurately the origin of the sinus. In many cases X-Ray examination alone will not suffice, particularly if several areas are involved. Bismuth paste has been used with some success but where the sinus is tortuous and the lumen small the bismuth is apt to be arrested along the track and may give rise to errors in the X-Ray interpretation. Because of its oily character and because of its weight Lipiodol flows readily along the course of the sinus even when the latter is very narow.

Technique:—First a probe is inserted into the sinus to get a general idea of the direction of the sinus. Then with a syringe Lipiodol is injected into the opening of the sinus and the patient is placed in such a position that the mouth of the sinus is uppermost. After one hour, stereoscopic X-Rays are taken and the Lipiodol will be seen in the track of the sinus. I have selected a few lantern slides to show this application.

Case 1:—P. P., No. 28,229, male, age 36, came to me February, 1928, for treatment of a persistent discharging sinus above the right elbow. He gave a history of sudden onset of pain and swelling in the elbow in 1926. Incision over the distal end of the upper arm was made at that time and a discharging sinus developed despite efforts to close the wound. In the following two years he had been operated seven times in various attempts to close the sinus, the operations consisting of curretting the distal end of the humerus and olecranon where X-Rays showed roughening and irregularity in contour of the bones. Bismuth paste had been injected for X-Ray study, and methylene blue was injected as a guide before one of the later operations. Despite all efforts during a seven months hospitalization the sinus persisted. I injected 2 c.c. of Lipiodol into the sinus opening and had X-Rays taken immediately. These show the sinus apparently entering the elbow joint. An X-Ray taken after the arm had been pendant for one half hour shows the sinus leading to the proximal and inner surface of the ulna. At operation a subperiostal abscess was found and the area curretted. The sinus was obliterated and has remained closed for the past year.

Case 2:—A.R., #18379B, age 29, male, developed a swelling in the right thigh in March 1929, followed in a few weeks by a discharging sinus in the mid ⅓ of the right thigh on the antero-lateral aspect. X-Ray showed what appeared to be some irregularity about the superior margin of the acetabulum. X-Rays of the shaft of the femur showed

*Read before the Rhode Island Medical Society June 6th, 1929.

no evidence of bone pathology. One hour after injection of Lipiodol, X-Rays showed the opaque shadow of the Lipiodol from the sinus-opening up along the shaft of the femur to the wing of the ilium. This patient is still under observation.

In The Epidural Space

Lipiodol may be injected through the sacro-coccygeal joint into the epidural space.

Technique:—The instruments are the same as those used in lumbar puncture. The patient lies in a prone position on the table. After cocainizing the sacro-coccygeal joint a lumbar puncture needle is inserted into the sacral canal in the direction parallel to the body of the sacrum. Care should be taken not to penetrate the dura. One or two c.c. of ½ novocaine is then injected through the needle and if this injection is easily accomplished one can be sure the needle is in the epidural space. Three c.c. Lipiodol may then be injected. The patient is then put into the knee-chest position for one hour, at the end of which time X-Ray examination is made.

Normally Lipiodol will be seen in the roentenogram as elongated splotches extending up the epidural space. An abrupt stoppage of the Lipiodol in its course will be seen in destructive lesions of the spine like carcinoma, tuberculosis, and fracture with or without dislocation. By this procedure Spina Bifida Occulta may also be demonstrated. There will be no stoppage of the Lipiodol in arthritis, scoliosis, and chronic spondylosis.

In The Subarachnoid Space

Perhaps the most striking application of the Lipiodol method of diagnosis, and the one with which I have had most experience, is in the exploration of the subarachnoid space.

Until recently the localization of intervertebral lesions was a difficult procedure and in many cases one fraught with a considerable margin of error. Previously it was customary to do a lumbar puncture to determine the presence of the so called "pressure fluid." If the block was not complete the spinal fluid was likely to be quite normal macroscopically, microscopically, and chemically. The skin was then tested for pain and thermal sensation. The upper level of the area of diminished sensation, if present, gave the index as to the location of the block. Such findings were extremely unreliable because of the non-cooperation or the emotional instability of many patients, or because the sensory changes were not well defined. It was necessary then to wait until the sensory line was established before localization could be estimated. Treatment then consisted in an Exploratory Laminectomy — the removal of two vertebrae above and two vertebrae below the level of the suspected block. If nothing abnormal was encountered in this region, the laminectomy was continued upward and downward — in all a very difficult operation both for the patient and for the surgeon. With Ayer's introduction of puncture of the Cisterna Magna a new impetus was given to studies of the dynamics of the spinal fluid and to spinal conditions affecting it. By this new method it became possible to determine with a considerable degree of accuracy the presence of a block — complete or incomplete — in the subarachnoid space. The technique is as follows:—The patient is placed on the table directly on his left side. A lumbar puncture is performed. An air manometer marked off in millimetres is attached to the lumbar needle, care being taken against any loss of spinal fluid. The patient's head is then flexed on the chest, and another needle inserted through the dura into the cisterna magna. The stillete is withdrawn and the air manometer attached to this needle. Both manometers are identical in size and in scale. If no obstruction is present in the subarachnoid space the spinal fluid should rise to the same level in the cistern and in the lumbar manometers. The oscillations due to pulse pressure and to respiration should also be identical. Pressure on the jugular veins should cause elevation of the fluid level in both manometers, as should also pressure over the abdomen. In normal patients, removal of spinal fluid from the lumbar region will cause a drop in the fluid level of both manometers. Removal of fluid from the cistern should likewise cause a lowering of the fluid level in both manometers. On the other hand, if there is some obstruction between the cistern and the lumbar regions of the subarachnoid space, variations in the readings will occur, i.e., the cistern fluid will be at a higher level than the lumbar; the oscillations will be more pronounced in the upper manometer than in the lumbar one; pressure on the jugular veins will show a greater rise in the cistern than in the lumbar, and finally removal of the fluid from the lumbar spaces will cause a marked fall in the

lumbar manometer and a proportionately lesser fall in the cistern. These findings vary with the completeness of the spinal block. The fluid from the cisterna and the lumbar fluid are then examined separately for the color, number and type of cells, protein and globulin. By this method it becomes possible to determine the presence of a tumor even before it has progressed sufficiently to cause a spinal canal block with characteristic symptoms. In other words, a diagnosis of spinal canal block can be made early, and treatment instituted before the cord is seriously compressed. While this combined puncture is of great aid in making a diagnosis of compression between the cistern and the lower lumbar vertebrae, it does not aid in the accurate localization of the block.

In cases where the combined puncture demonstrates an obstruction, the needle in the lumbar region is withdrawn. After removing the manometer from the needle in the cistern, ½ c.c. of Lipiodol is injected into the cisterna magna. The patient is immediately placed in a sitting position and if feasible fluoroscopic examination is made to watch the descent of the Lipiodol. A roentgenogram is immediately taken of the entire spine to determine whether or not there is a temporary arrest of the opaque medium.

The patient is returned to bed and kept in the erect posture for 24 hours, at the end of which time the X-Ray examination is repeated. If the Lipiodol meets an obstruction it stops and is very clearly seen in the roentgenogram. If the subarachnoid is free the shadow of the Lipiodol will be shown in the lower end of the canal. This program of examination was used in the following cases:

Case 3:—D. J., No. 987, female, housewife, age 64.

She gave the history of occasional pains in her neck and occipital headache since 1922. In 1924 she had pain and tenderness in her right eye with failing vision. In 1925 at the New England Deaconess Hospital, an enucleation of the right eye was done. The pathologic examination of the eyeball showed "a slightly melanated sarcoma of the choroid. There was no indication of the spread of the sarcoma and in all probability the removal was complete and probably early, as there is no involvement of the optic nerve." She made a good recovery from the operation and was in fairly good health until six months previous to my first examination. At that time, she complained of severe pains in both legs with fatigueability. She came under Dr. Donley's care in April, 1928, and Dr. Donley sent her into the hospital for investigation. She appeared older than her alleged 64 years and showed poor muscle tonus generally. She was bedridden because of pain and weakness in both legs. Over the 3rd. dorsal vertebra a slight fullness was found with tenderness to pressure over this area. There was no edema of the legs. All motions of legs were performed weakly and showed marked fatigueability. She complained of a sense of numbness alternating with extreme hypersensitiveness from her toes to the level of the umbilicus. No definite sensory level could be made out because of the restlessness of the patient. X-Rays taken an admission to the hospital showed no evidence of destructive bone disease, and no deformities or displacements to account for the cord pressure symptoms. Blood Wassermann was negative. A combined cistern and lumbar puncture was performed which showed the pressure in the cistern manometer about 25mm. higher than in the lumbar during the various tests. The protein content of the cistern fluid was 35 mg. as compared to 425 mg. in the lumbar fluid. Globulin was absent in the cistern fluid and was three plus in the lumbar fluid. The cell count was 3 in each fluid.

½ c.c. of Lipiodol was then injected into the cisterna magna. X-Rays taken immediately after the injection showed the Lipiodol arrested at the level of the 3rd. dorsal vertebra. The patient was kept in a sitting position for 24 hours and X-Rays were again taken. These show the entire amount of the Lipiodol suspended at the 3rd. dorsal vertebra. A diagnosis of complete spinal block was made. While the possibility of malignancy was considered, we deemed it advisable to do a laminectomy in the hope of relieving the pains in her legs which were becoming increasingly severe. At operation a darkly colored tumor was found just posterior to the lamina of the 3rd. dorsal vertebra on the right side. The 3rd. dorsal vertebra itself was found to be deeply discolored but normal in contour. The dura was normal in appearance while the arachnoid was thickened and adherent to the dura at the level of the 4th. dorsal vertebra. In the sac thus formed was a thick gelatinous fluid with some oily drops, probably Lipiodol. The

arachnoid was incised and the fluid was released. A probe inserted above and below showed no evidence of further block. Sections of bone from the spine and the excised tumor were sent to the Laboratory for pathological study. The pathologic diagnosis was: "mixed cell sarcoma with considerable melanin deposits. Infiltration of mixed cell sarcoma into the body of the spine."

Following the operation the patient's condition became gradually weaker and on the 7th day after operation, she died. I show this case to demonstrate the use of Lipiodol in Arachnoiditis.

Case 4:—L.M.B., No. 22,017, woman age 56, was referred to me in February, 1928, for treatment of Arthritis in the hips and lower spine after X-Ray examination had shown advanced hypertrophic changes in these joints. She gave a history of aching feet followed by fleeting sharp pains and varying degrees of weakness in both legs, the right more pronounced. On examination no definite level of anaesthesia could be made out but there was diminished sensation from toes to hips and through both inguinal regions (level of the 8th Dorsal segment). Thermal sense was intact to both legs. There was definite weakness in both legs without frank paralysis. A combined cistern and lumbar puncture was performed and gave indications of a partial block in the subarachmoid space. ¾ c.c. of Lipiodol was then injected into the cisterna magna. X-Rays taken immediately showed the Lipiodol arrested at the level of the eleventh Dorsal interspace. X-Rays taken 24 hours later showed the Lipiodol still at the eleventh Dorsal interspace. A laminectomy was done—a tumor mass, four inches long was found extending from the eleventh Dorsal vertabra to the first Lumbar on the right lateral and slightly anterior side of the cord. The tumor was adherent to the wall of the dura by a pedicle. The tumor was removed and sent to the Laboratory for microscopical study. Pathological report on tumor:

"Connective tissue with some blood vessels and small amount of fatty tissue. Slight round cell infiltration. Diagnosis: benign tumor." This patient made a good recovery. She is free from leg pains and has regained all the power in her left leg. There is some weakness in the dorsiflexors at the right ankle. This case shows that localization by sensory level alone may be inaccurate.

Case 5:—E.H., No. 549, female, age 68. In 1925 I was asked to see this patient and to recommend some type of apparatus to make her more ambulatary. Three years previously, while doing her housework, she fell and injured her back. Immediately following this injury she noticed numbness in her feet, gradually extending up her legs to the thighs. These symptoms subsided after a few weeks and she resumed her usual activities. One year later she again had pains in both legs and for two years was under medical treatment for "Rheumatism." Just prior to the time I first saw the patient she had been under investigation at one of our larger hospitals for a period of three weeks. X-Rays of her spine were taken and reported "negative for spinal fracture." She was discharged from the hospital with the diagnosis: "Paraplegia (cause unknown)." The patient had been confined in bed for many months and because of her obesity could be moved about only with the greatest difficulty.

Examination showed the right leg very edematous, with beginning decubitus over the right buttock. There was no voluntary motion in her toes, ankles, knees, or hips. She could not distinguish hot or cold sensations on the skin from the toes to the costal border. She recognized painful pricking in the right leg but was uncertain on the left leg.

A lumbar puncture was done at her home and spinal fluid pressure records were taken—all apparently normal. The spinal fluid was clear, did not coagulate. Wasserman negative, 1 cell per cmm. Globulin not increased, sugar present in the spinal fluid but not estimated quantitatively. I sent the patient to a hospital for further study. A combined cistern and lumbar puncture was performed with findings suggestive of partial block between the lumbar and cistern regions. One c.c of Lipiodol was then injected into the cistern and in the immediate roentgenogram showed at the level of the inferior surface of the fourth Dorsal vertebra. X-Rays taken after the 24 hour interval showed the greater portion of the Lipiodol at the same level, with a few drops at a lower level. At operation a tumor delivered itself when the dura was opened. It was about the size of an English walnut and was connected to the cord by a small pedicle. Histologically it was found to be an intradural fibroma of the spinal cord. In four months she was getting

about her house and yard without assistance. Six months after the operation she was doing the major part of her houswork. It is now over four years since her operation and she shows no residuals. Her recovery is complete.

Summary

1. In tracing sinuses, the use of Lipiodol will give more accurate X-Ray findings than will the use of other opaque media.

2. With Lipiodol in the epidural space, limits of destructive lesions like tubercular pachymeningitis, primary or secondary cancer, and spinal fractures can be outlined.

3. Where the sensory findings are in doubt and where combined Cistern-Lumbar puncture demonstrates an obstruction, Lipiodol in the subarachnoid space will clearly locate the block.

4. The injection of Lipiodol is without pain and is a safe procedure.

DISCUSSION

Dr. Donley: It is a real pleasure to have heard Dr. McCusker's paper because it is a notable example of the progress in knowledge and in methods which has raised modern medicine from an art of observation and empiricism to an applied science founded upon research; from a craft of tradition and sagacity to an applied science of analysis and law; from a descriptive code of surface phenomena to the study of deeper affinities; from a set of rules and axioms of quality to measurements of quantity.

As one looks back over the history of neurology it is marvelous to think that so much progress should have been made in the diagnosis and treatment of spinal cord disorders between 1887 and the present day. And yet it was only so long ago as 1887 that Sir William Gowers first diagnosed and Sir Victor Horsley first successfully removed a tumor from the spinal cord of a man, aged 42, who had been travelling all over the world seeking relief from excruciating pain in the left scapular region together with progressive loss of power in the legs which were the seat of constant spasmodic twitchings. This patient was thought to have an aneurysm, disease of the vertebral column and a number of other things until Sir William Gowers without the aids of lumbar puncture of the X-Rays or Lipiodol, concluded that the patient was suffering from compression of the spinal cord due to pressure from a tumor and advised an attempt at its removal. It is as dramatic as anything in medical literature to read this stirring report of Gowers and Horsley which is to be found in the Medico-Chirurgical Transactions of London for the year 1888 under the title, "A Case of Tumor of the Spinal Cord." Removal. Recovery.

The tumor was a benign growth, a fibromyxoma, an oval or almond-shaped body of a dark, bluish-red color, resting on and attached at its lower extremity to, the highest root of the left fourth dorsal nerve, just where the posterior nerve roots were gathered together in one trunk. It had impressed itself on the lateral columns of the cord and produced there a deep longitudinal groove which accounted for the patients symptoms. I may add that the man made a complete recovery and that the technique of laminectomy described in this paper by Sir Victor Horsley is in all essentials that followed by Dr. McCusker and other surgeons to-day. What spectacular progress was set on foot by this case of Gowers and Horsley may be realized by a perusal of the table and analysis of symptoms which is appended to the paper. Here are the chief clinical facts relating to 57 other cases of cord tumors reported in medical records which disclose the melancholy fact that had operation been resorted to after correct diagnosis 80 per cent of these tumors should have been removed whereas 100 percent of the patients died.

It is difficult for us who witness the skill and finesse with which Dr. McCusker and other surgeons perform laminectomy to realize that in 1887 this operation was looked upon with fear and dread. Perhaps it may be of interest to note that laminectomy was first proposed to the profession by the eighteenth century German surgeon, Lorenz Heister who made the first post-mortem section of appendicitis and introduced the term tracheotomy. Writing in the sixth edition of his General System of Surgery published in 1757, at page 140, he is discussing the treatment of injuries to the spine and speaks as follows: "But to offer the patient no assistance because we despair would seem cruel and uncharitable, therefore we must try our skill though our attempts should be in vain; in order to which

the surgeon must lay bare the fractured vertebrae with a scalpel and replace or else remove such fragments as injured the spinal marrow." And yet 124 years later, while discussing the treatment of fractures of the spine, Mr. Herbert Page says in Heath's Directory of Surgery, published in 1881, "The operation of trephining the spine, proposed many years ago and adopted several times, has made no progress in surgery, nor is it likely to do so . . . . It is an operation not within the range of practical surgery." One of the first to rise and congratulate Sir Victor Horsley at the Medico Chirurgical Society's meeting was Mr. Herbert Page.

These surgeons, be it observed, were discussing laminectomy as a therapeutic procedure in cases of fracture of the spine. That this operation might be useful in other than fracture cases never entered their heads. The reason for this is clear enough. They were operating in pre-Listerian days and the enemy was sepsis. Furthermore, the diagnosis of spinal neoplasms, as to their localization, was in the womb of the future. Erb, writing on diseases of the spinal cord in Ziemmsen's Handbook in 1878, remarks that "If the diagnosis and location of a tumor were certain, one would think of a trephining of the spine. Only rarely could sufficient support for the diagnosis be obtained to justify the heroic operation of laminectomy. Success from such a surgical procedure was not beyond a possibility." A few years later, in 1882, the great clinician, Austin Flint, wrote in his Practice of Medicine, "the existence of an intraspinal tumor can hardly be determined with certainty, and assuming that a tumor exists, to determine its character from the symptoms, is impracticable."

With this brief sketch by way of orientation in our minds, let us return to Dr. McCusker.

We will all agree, I suppose, that the diagnosis of spinal cord disorders is not easy—not easy that is, if we demand of ourselves the fulfillment of those conditions which Hughlings Jackson insisted are necessary to a complete diagnosis. You will remember that this great man, as rich in philosophic depth as he was acute in observation, taught that a satisfactory diagnosis must establish three things, first, damage of organ, the anatomy; second, disturbance of function, the physiology; third, disease of tissue, the pathology. Insofar as any of these elements is incomplete or lacking in just that degree is our diagnosis limited and unsatisfactory.

Now with respect of spinal cord diseases, it is usually possible from a careful history and a painstaking physical examination to determine the anatomy, namely, that it is the spinal cord which is the seat of the disturbance. But to elucidate the precise level of the mischief, and to decide upon the disease of tissue, the pathology, is many times difficult and sometimes even impossible. In the study of functional disturbance we must rely in part upon the co-operation of the patient, and we all know from experience how inconstant and misleading this may be. In the matter of the determination of sensory changes, for example, so important in their meaning, we are at the mercy of the patient even when he is intelligent, and when he is not, we are led into a mirage. So it turns out that the precise delimiting of sensory changes and levels is not infrequently unsatisfactory or perhaps impossible. As to the third element in the diagnosis, the disease of tissue, we are likely to be in even a more unsatisfactory situation. When we have made up our minds to the anatomical and physiological changes we are left with several options in the matter of pathology, for here as elsewhere in medicine, things may not be what they seem. In these complexities and perplexities Lipiodol, that is to say iodine in poppy oil, and the X-Ray come to our assistance.

I think most physicians will agree that the determination of the existence of spinal cord compression is often a question of the greatest difficulty, and yet if we leave it unanswered we are in all likelihood depriving the patient of operative relief or cure for his symptoms. The introduction of Lipiodol or of any other foreign body within the confines of the central nervous system should be undertaken only when there is a real need. But when this need exists we ought to employ every means at our command to enlighten our ignorance or dispel our doubt. This is especially true when we suspect the presence of cyst, tumor or other pathological which may be amenable to surgical help. I can imagine nothing more tragic than to misjudge the presence of a removable cord disease because of failure to employ all the aids which are at our disposal. Of these aids, Lipiodol, is one of the most useful. We are of course aware that its employment is,

or may be, attended with some dangers, but if it is not used where it is not necessary, I would say that it is far, far better to risk any ill effects from the injection of Lipiodol than it is to risk the state of hopeless invalidism and death which must result from an unrelived compression of the spinal cord.

And let us not expect too much from any diagnostic method. Lipiodol enables us to project a shadow upon a X-Ray film. It does this well but it does no more. The film will not interpret itself and all like shadows may on occasion mislead us. But that is not the fault of the film. What the film records is true enough, that the Lipiodol is held up at a certain place or places in the spinal canal. The error may arise when we attempt to attach a meaning to what the film records. But this is just another way of saying that our knowledge is incomplete. If, however, when confronted with the momentous decision as to the presence or absence of removable compression, we have exhausted all the aids open to us from careful clinical study together with such assistance as comes from the chemical and dynamic study of the cerebrospinal fluid and are still in doubt, then the assistance of Lipiodol injection should be invoked. And may I say in concluding that it is a good practical rule to regard all non-inflammatory spinal cord conditions as being potentially due to removable compression, until this postulate is proved to be not true.

A REPORT ON PHARYNGEAL ANESTHESIA.*

By Albert H. Miller, M.D.,
Providence, Rhode Island

The title originally chosen for this paper was *"500 Consecutive Cases of Pharyngeal Anesthesia without Death or Complication."* On submitting this title to a member of the club, the objection was raised that it is unfair to date a series of cases back to but not including the last unfavorable case. This objection seems a fair one and the title and form of the paper have been changed accordingly. In the present series of 3,000 consecutive operations, pharyngeal anesthesia was employed 499 times. In these 499 cases there were no deaths and one minor complication. These cases continue a series previously reported in which pharyngeal anesthesia was employed 118 times in 1,000 consecutive cases.[1]

It is difficult to form an opinion as to the results of anesthesia because these results are so closely related to other factors of surgical work. Many of the patients who seek benefit from surgery are not in the physical condition which we would choose for the successful performance of the required operations. Surgical risk varies from the operation of choice on a healthy patient to the operation of last resort on a patient whose resistance has been lowered by severe or long continued illness. A proportion of operations must be expected to be followed by complications and fatalities depending on the character of the work undertaken and performed. If no fatalities occur in a long series of unselected cases, the result must be attributed to skillful anesthesia and surgery and frequently also to good fortune.

A death which occurs while the anesthetic is being administered but before the operation has commenced must be attributed to the anesthetic with almost complete certainty. Yet the numerous cases in which death has occurred while patients were in the hospital awaiting operation adds an element of doubt even in this class of cases. When death occurs during the performance of an operation, the anesthetic must be considered but in conjunction with the influence of the operation and the patient's condition. For an operation to be successful, it is not sufficient that the patient leave the operating room alive. He must be returned to his usual health and activity. In post-operative deaths and complications, the anesthetic must again be questioned. These deaths and complications usually occur within a few days after the operation. If no complications have arisen within two weeks, the outcome is usually assured. When the patient has made a satisfactory recovery we are certain that the anesthesia as well as the other factors of the operation has been successful.

To simplify the problem of surgical risk, the cases are separated into three classes:—

First: Cases apparently uncomplicated.

Second: Patients suffering from organic disease.

*Read before the Friday Night Medical Club of Providence, October 19, 1928.

[1]Pharyngeal Insufflation Anesthesia, Miller, J. A. M. A. Aug. 5, 1922, 79, 441.

Third: Patients whose surgical conditions is so severe or so far advanced as likely to result in fatality.

In this series of 499 cases of pharyngeal anesthesia, 426 of the patients were of Class 1, 61 of Class 2, and 12 of Class 3. Among the Class 2 patients were three cases of heart block, one of coronary angina, and five cases of endocarditis with uncompensated valvular lesions. In two of the cases, the operation attempted under regional anesthesia, had been halted on account of the collapse of the patient and indefinitely postponed. Of the Class 3 patients there was one with sinus thrombosis and ten with advanced malignant disease.

The greatest number of operations were performed on the throat and upper air passages. The other operations included mastoid operations, cerebral decompression, laminectomy, operations for removel of diverticula of the oesophagus, breast amputations, operations on the cervical glands and on the Gasserian ganglion, various abdominal operations and one operation for removal of the rectum, sacrum and coccyx. In three cases the operation lasted for more than three hours.

The cases were checked up two weeks after operation for complications and fatalities. There were no deaths and only one complication, so slight as hardly to warrant attention. A cough and slight rise in temperature, which were noted 24 hours after a nasal operation, rapidly subsided. The results in this series of cases, so near to being perfectly successful, can not be attributed entirely to good fortune. The method of anesthesia is worthy of note.

The pharyngeal method of anesthesia probably originated in Providence, having been first used here more than 25 years ago. Active in its introduction were Dr. Frank B. Sprague and Dr. Edward S. Bacon. In its present form, ether vapor is produced in an automatic vaporizer and and is blown into the pharynx through a tube introduced through the nose or mouth of the patient. In the jar of the vaporizer is ether vapor of a strength of 60% by weight, 29% by volume or 22 millimeters ether vapor tension. The percentage is kept constant by an electric heater controlled by a thermostat. The construction of the vaporizer depends upon the law of physics that in a closed container the vapor tension depends upon the temperature of the liquid in the container. Liquid ether is kept at a constant temperature by the electric heater and thermostat. The ether vapor in the jar remains at a constant tension or percentage. To secure any required percentage of ether vapor, it is necessary to dilute this constant ether vapor with the proper proportion of air. An electric air pump is used to provide the current of air needed for pharyngeal anesthesia. It furnishes a current of from six to ten liters of air per minute. The air passages are of such size that the air current moves freely and is never under pressure. Normally this current passes through a by-pass attached to the vaporizer without the addition of any ether vapor. As the valve in the by-pass is gradually closed, an increasing amount of the air current passes through the jar of the vaporizer. In this manner any proportion of the ether vapor contained in the jar may be added to the current of air and blown into the pharynx of the patient. The proportion of ether vapor is constant but may be varied by opening or closing the valve of the by-pass. The construction of the vaporizer is such that it is not possible to force liquid ether into the patient's air passages. The tube leading from the vaporizer to the patient may be connected to either outlet of the vaporizer. As the valve in the by-pass has not been calibrated, the proportion of ether vapor drawn from the jar is not exactly measured and depends upon the judgment of the administrator which must be gained from experience. The setting of the electric thermostat may be disturbed by jarring. If the adjustment becomes lowered, the percentage of ether vapor may be insufficient. If the adjustment is raised, the liquid ether may be brought to the boiling point and the ether vapor tension greatly increased. It is necessary to frequently check up the accuracy of the thermostat setting by reading the thermometer which is attached to the vaporizer. This should remain at 90 degrees, Fahrenheit.

Delivery of the anesthetic vapor into the pharynx has evident advantages. Delivery in the mouth or nose is uncertain and inefficient as an unknown percentage of the vapor is wasted. In-

troduction of a tube into the larynx requires time and a profound initial anesthesia. Introduction of the pharyngeal tube through the mouth or nose is a simple matter and may be accomplished under light initial anesthesia. The tube should reach to a point opposite the tonsils. Delivery of the anesthetic vapor at this point is efficient and certain. Pharyngeal anesthesia has its greatest usefulness in operations about the face and upper air passages. As soon as the pharyngeal tube has been introduced, the anesthetist may withdraw to some distance and leave the operative field unimpeded by his apparatus. As the respiratory need of the patient is provided for by the current of air entering the pharynx, the face may be covered by the sheets and towels required for protection of the operative field. The pharyngeal method is chosen for operations which are to be performed with the patient in the prone position. In this position, the heavy anesthetic vapor constantly tends to gravitate downward and maintenance is difficult with the usual methods of etherization. Pharyngeal delivery does away with this difficulty.

The finely graduated dosage provided by the automatic vaporizer allows satisfactory anesthesia with a minimum amount of ether. The light zone of anesthesia which results contributes largely to the satisfactory recovery of the patients. In operations about the upper air passages, preliminary medication, which might inhibit the throat reflexes, is omitted. The degree of anesthesia should be so light that the coughing reflex is preserved. With this degree of anesthesia it is probably impossible for any foreign matter to be inspired through the larynx. Only in this way can we account for the absence of pulmonary complications in this series of cases.

That this degree of anesthesia is sufficient for the satisfactory performance of the usual nose and throat operations has been proved in the experience of many surgeons. Rather than theoretical advantages or objections in any method of anesthesia, it is the results which count. The results from pharyngeal anesthesia, carefully conducted with an efficient apparatus, leave little to be desired in the way of safety. This method is an essential unit in the anesthetist's armamentarium.

Nature of Operation and Results

Operation	Number of cases	Results*
Tonsil and adenoid	326	
Dental	34	
Mastoid	28	
Sinus	26	One developed cough
Breast	15	and fever lasting
Eye	12	for 24 hours.
Face	12	
Nasal septum	11	
Maxilla	6	
Cervical glands	6	
Goiter	5	
Brain	5	
Larynx	3	
Kidney	2	
Spinal cord	2	
Tongue	2	
Rectal	2	
Abdominal	2	
Total	499	

*Satisfactory except as noted.
In seven other operations, the tonsils also were removed.

PNEUMOCOCCIC EMPYEMA

Nine cases of pneumococcic empyema treated by intrapleural injections of ethylhydrocupreine hydrochloride are reported by Harry Lowenburg, Philadelphia (*Journal A. M. A.*, July 13, 1929). All the patients received intrapleural injections of ethylhydrocupreine hydrochloride (optochin). In four of them rib resection and drainage were done after from four to six injections of ethylhydrocupreine hydrochloride. All recovered completely after operation. Five patients were not treated surgically but made complete monoperative recoveries. The mortality in the nine cases was nil. In those patients who recovered without surgery there was a gradual subsidence of fever with improvement in the physical signs. Those cases which were diagnosed late, and in which fever was slight or entirely absent, did not show any increase in temperature. Before the physical signs improved it was noted that in the favorable cases the pleural exudate, which sometimes reaccumulated before final recovery, thus accounting for the persistence of the physical signs, underwent retrogressive change; the pneumococci, too, became decidedly less and were less viable on culture, and in some cases did not grow at all on culture, although they were recoverable by direct smear.

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FREDERICK N. BROWN, M.D., *Editor*
309 Olney Street, Providence, R. I.

CREIGHTON W. SKELTON, M.D., *Business Manager*
166 Broad Street, Providence, R. I.

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The R. I. Medico-Legal Society—Last Thursday—January, April, June and October. Henry M. Boss, Jr., President; Dr. Jacob S. Kelley, Secretary-Treasurer.

EDITORIALS

THE PHYSIOLOGICAL CONGRESS

The Physiological Congress, whose meetings in Boston recently have been finished, brought together physiologists of renown from all parts of the world. The Congress was generally regarded as one of the most successful and acted in a way as a clearing house of international work and ideas. Naturally many of the papers read represented new or nearly new work and a few of these were indeed startling.

The press eagerly reported the Congress and featured prominently its activity. Such material could easily become flaming headlines of the most false and unusual sort. Untrue sensational newspaper accounts not only buoy up unwarranted hopes which must fall, but they also smooth the way for quacks and fakers.

One of the pleasant features of the present Congress was the truthful and moderate reports that appeared in the daily papers. There must have been some sort of agreement between newspapers and officials of the Congress for scareheads and sensational reports were extremely rare. The public was kept generously and truthfully informed.

EXPERT TESTIMONY

Recently New York state has seen an exploitation of the testimony of mental experts; two experts of the highest character and experience testifying that a murderer was legally insane at the time of the murder; two others testifying that he was legally and medically sane. This is a most unfortunate situation and again brings the testimony of the expert into discredit. It is high time that the medical profession, through its State and National organizations, insisted that the constituted legal authorities determine upon appointment of a commission which shall conduct its examination as a body and not as separate individuals, shall deliberate upon their findings and present then as a commission, even though members of that commission differ. If the commission is made up of three recognized experts there can be no possibility of a deadlock; and we will no longer have the spectacle of two or three testifying to the murderer's sanity and an equal number to the presence of mental disease. Rhode Island for a number of years past has been particularly free from this abuse of medical testimony, and it has been accomplished by the Attorney General's office appointing three representatives who should examine the individual on trial and should report back to the Attorney General's office. Sometimes this report has been that the defendant was responsible and sometimes irresponsible. Of course, this type of procedure does not necessarily mean that the counsel for the defense will not employ other experts, and that the State's experts and the defendant's experts may not disagree, but in Rhode Island the Attorney General's office has sought out three experts who commanded the respect of the medical profession and this has universally resulted in both State and defendant's counsel being willing to abide by the report of this commission. The medical profession should get behind legislation which would tend to make impossible the present spectacle of members of the medical profession forced to examine an individual separately for the defense and another group separately for the prosecution. If it were stipulated that the State should employ one expert and the defense another, and that these two should agree upon a third, or, in case they could not agree, that the State Medical Society should name a third expert, and that these three medical men should constitute a commission to examine the defendant jointly, and report as a commission, we would immediately strike a serious blow at the present commercialism which exists too frequently in medical expert testimony. Such a move should be backed solidly by the medical profession and there is every reason to believe that if the medical profession should agree on this type of legislation that it would meet with the highest cooperation of the legal profession, especially that part of it constituting the Attorney General's office. But until such time as this action is taken by the state medical society, or by the American Medical Association, it is probable that the present unfortunate situation will continue to exist, and a house divided against itself cannot command respect.

ETIOLOGY OF BILIARY INFECTION

The route of gall bladder infection has been under discussion for a long time. The commonest sources from which infection could arise are the duodenum, bile from the liver, lymphatics from the liver to the gall bladder and the cystic artery. Each source has been investigated and has had for a time its proponents. Wilkie and his associates have recently investigated this subject. They believe the commonest source of infection is through the cystic artery. The culture is best obtained from the sub-peritoneal coating of the gall bladder or from the lymph node near its neck and extends from there to the liver.

The investigators point out that failure to obtain positive cultures from the sub-peritoneal layer of a diseased gall bladder is largely due to failure to carry out the proper technique which they have developed.

OZENA

L. L. Albert, M.D.
229 Valentine Lane, Yonkers, N. Y.

There is a wide diversity of opinion as to the etiology of genuine ozena. The pathological picture is not perfectly clear and no one recognizes the incipient process with certainty. Similar clinical ozena pictures may be of entirely different

etiology. Of the many etiological theories, the infectious and microbiological origins have always had the most followers. Both luetic and tuberculous etiologies have been set forth. Various other bacteria have been isolated and described as the exciting causes. Among these are the bacillus described by Perez of Argentina, a pseudo-diphtheria bacillus, and a bacillus fetidus described by Hajek of Vienna. With the exception of Perez's work, the etiological factors described were proposed more on the basis of supposition than on valid experimentation.

About twenty years ago, Dr. Perez described a small coco-bacillus, "the bacillus-fetidus-ozena," as the cause of true ozena. His experiments were based on precise bacteriological analyses of the nasal secretions of ozena patients. He based his assertions on the power of these microbes to produce ozena fetor on artificial nutriment media; and on the transmission to rabbits of an ozena homologus to that in man. His extensive experiments proved that ozena is both infectious and contagious.

The greatest patience and exactitude are required to isolate the coco-bacillus. Myriads of other germs are present in the nasal secretions of ozena patients. These enter into competition on artificial plantings and give quite different culture pictures in simultaneous implantations upon various nutrient media. Perez found that isolation through an animal body was the best way of obtaining a pure culture. From a bouillion having the characteristic fetor a small amount was injected intravenously into a rabbit. From the purulent secretions which flowed abundantly from the animal's nose a few days later, the coco-bacillus was obtained in pure culture. In this way he attempted to prove that the coco-bacillus was the etiological factor in true ozena cases. Again, after analysis of the nasal flora of several normal rabbits, separate pure cultures of different bacteria were injected intravenously. Twelve hours later the animals injected with the coco-bacillus showed a decided increase of this particular bacillus in the nasal secretions, an increase which was not correspondingly present in the other injected animals.

Pathological specimens of noses of rabbits which had been injected showed marked changes in the turbinates. They were in all stages of inflammation from a simple hyperamia to complete atrophy. And a final crusted stage existed similar to that of human ozena. Further experimentation showed that the Perez bacilli were capable of producing a genuine soluble toxin. The cultural fetor was so characteristic that it was considered pathognomonic of it's generator's presence in a mixed culture.

Treatment was directed into the channel of a specific vaccine. This was accomplished by subcutaneous injections of destroyed coco-bacilli in an attempt to excite the active formation of specific antibodies. Such a vaccine may be curative or preventative; curative in chronic ozena cases, and usually preventative when used in infectious diseases anteceding acute ozena cases. The vaccine is a common saline infusion of tribes of organisms cultivated from various ozena cases. It is injected weekly in doses of five hundred to ten hundred million.

Syphilis and the pseudo-ozena brought about by severe suppuration of sinus cavities are not amenable to this type of vaccine and they should be ruled out before attempting to institute this form of vaccine treatment. In lues, the destruction is more extensive and the bridge of the nose is usually of the "saddle-back" variety.

The greenish-yellow crusts and scabs of ozena are due to the accumulation and drying of secretions on the surface mucosa. The dryness is due to the enlargement of the nasal cavities and the subsequent destruction of those elements in the mucus membrane which help furnish the normal moisture. Fetor usually runs parallel to the intensity of the crust formation.

The improvements derived from Perez's vaccine treatment may be divided into nasal, regional and general. A complete distinction is impossible. Local reactions at the site of puncture vary considerably. Slight reddening and infiltration are usually present. These symptoms appear after the first three injections. Later developments include a running nose, severe pulsation, nose bleed, reddened nares, a feeling of easier blowing of the nose, loosening of the crusts and a temporary increase of the odor. Regional reactions include reddening of the face, due to marked congestion, a feeling of heat in the head, headache, frontal pain, toothache, conjunctivitis, sore throat and ringing in the ears.

In favorable cases the crusts decrease and fetor diminishes to final disappearance. Daily nasal

irrigations may be reduced in number and later stopped altogether. A further observation is the disappearance of the distressing dry throat and larynx so common in ozena.

It is believed that active immunization with the coco-bacillus offers a favorable prognosis. The word cure is expressly avoided. Only time and further experimentation and observation can develop a proof-positive cure.

Operative treatment, consisting of breaking together the external walls of the nasal cavities or of inserting bone transplants under the septal mucosa so as to materially lessen the intra-nasal spaces, has been tried with varying success.

It is the sad fate of those afflicted with ozena not only to be debarred from society, but often to be deprived of the opportunity of earning a livelihood. Therefore anything which offers some possibility of improvement in this condition certainly should be given a welcome. Perez's vaccine will improve about eighty per cent of the usual run of ozena cases. About twenty per cent will remain uninfluenced.

SOCIETIES

Providence Medical Association

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Arthur H. Ruggles, Monday evening, October 7, 1929, at 8:50 o'clock. The records of the last meeting were read and approved. The Standing Committee having approved their applications the following were elected to membership:

Ezra Sharp Francesco Ronchese

Dr. W. Louis Chapman showed an X-ray of cancer of the esophagus. Also another which he felt to be calcified deposits about the pelvic region. Also a case of extreme constipation apparently from visceroptosis and one where the transverse color was above the stomach. Dr. J. E. Kerney showed a wooden penholder removed by perineal section from the prostrate.

The first paper of the evening was the Gradenigo Syndrome by Dr. James W. Leech. It is a triad: 1. Purulent discharge from the middle ear. 2. Paralysis of the sixth nerve, and 3. Severe pain in the fifth nerve. It is due to the close relationship of the abducent nerve and fifth nerve to the petrous bone. Dr. Leech reported four cases. Two of these recovered without mastoid operation but nevertheless he feels such operation is indicated. The paper was discussed by Dr. Adams, Dr. L. B. Porter, Dr. Messinger, Dr. C. A. McDonald and Dr. Leech.

Next was a report of a Post Operative Death with Autopsy Findings by Dr. Anthony Corvese and Dr. Everett H. Smiley. After an appendectomy without acute appendicitis a 17 year old girl died within a week with extensive liver necrosis and severe hemorrhagic condition in the heart muscle. Dr. Ewing felt this to be a toxic condition and Dr. Mallory an infection.

Dr. Wilfred Pickles read a paper on the Technique and Value of Encephalography. He introduces air into the ventricles by withdrawing all the fluid possible by lumbar puncture and introducing air. The pressure is measured and brought back to normal by air. He showed a series of slides illustrating the anatomy, the presence of air in the different spaces in normal and abnormal conditions and in one case of his own one ventricle was practically obliterated. This came to operation and autopsy and a long dural endothelioma was demonstrated. The paper was discussed by Dr. Gerber, Dr. C. A. McDonald, Dr. Batchelder, Dr. Kelly, Dr. Sanborn and Dr. Pickles.

The meeting adjourned at 10:45 P. M. Attendance 67. Collation was served.

Respectfully submitted,

Peter P. Chase,
Secretary.

ANNOUNCEMENTS

On May 13, 1930, the United States Pharmacopoeial Convention will meet in Washington, D. C., to organize the work of revision of this official standard for drugs and medicines. The Convention meets but once in each decade and the societies and organizations entitled to representation in the Convention are named in its constitution and by-laws. In order to admit new members to the Convention it is necessary to amend the constitution and by-laws. The method

of making such amendments is that they must first be voted on by the Board of Trustees, then published in the medical and pharmaceutical journals and voted on finally by the Convention itself.

The following amendments* to the Constitution and By-Laws of the United States Pharmacopoeial Convention are recommended by the Board of Trustees:

CONSTITUTION

ARTICLE II

Membership

Section 1. The members of the United States Pharmacopoeial Convention, in addition to the Incorporators and their associates, shall be delegates elected *(contingently)* by the following organizations in the manner they shall respectively provide: Incorporated Medical Colleges, and Medical Schools connected with Incorporated Colleges and Universities; Incorporated Colleges of Pharmacy, and Pharmaceutical Schools connected with Incorporated Universities; *Departments of Incorporated Universities, which Departments are devoted to scientific research in chemistry or in other lines related to chemistry or pharmacy;* Incorporated State Medical Associations; Incorporated State Pharmaceutical Associations; the American Medical Association; the American Pharmaceutical Association, the American Chemical Society, the National Association of Retail Druggists, (and) the National Association of Boards of Pharmacy, *and the Federation of State Medical Boards of the United States.*

Medical and Pharmaceutical Associations and Colleges of Medicine and Pharmacy in Hawaii, Porto Rico, the Philippine Islands and in the Republic of Cuba (where the Pharmacopoeia of the United States has been adopted as the official pharmacopoeia) shall likewise be entitled to representation by delegates on the same basis as the other Associations and Colleges mentioned in this Section.

Sec. 2. Delegates appointed by the Surgeons-General of the United States Army and Navy, and the Surgeon-General of the United States Public Health Service, the Secretary of Agriculture, of Commerce, the Association of Official Agricultural Chemists, the Association of American Dairy, Food and Drug Officials, the National Wholesale Druggists' Association, the National Dental Association, the American Drug Manufacturers' Association, *the American Pharmaceutical Manufacturers' Association, the Federal Wholesale Druggists' Association,* the United States Division of Customs, (and the University of Havana) and by the organizations not hereinfore named which were admitted to representation in the Convention of 1900, shall also be members of the corporation.

BY-LAWS

CHAPTER VII

Of the Committees on Credentials and Arrangements

Article 1. The Committee on Credentials (and Arrangements) shall consist of five members and shall be appointed by the President from among the delegates to the decennial meeting, not less than two months before the meeting.

Art. 2. It shall be their duty to examine carefully the credentials of all delegates. *Credentials issued in blank, leaving the names of the delegates and alternates to be inserted subsequently by other than the regularly constituted officers of the appointing associations or institutions, shall not be accepted as meeting the requirements of this Chapter.* Immediately before the meeting of the Convention they shall furnish to the President a roll containing the names of the Incorporators, the Officers of the Convention, the Board of Trustees, the General Committee of Revision and of those delegates whose credentials are unquestioned and approved. They shall also make a report to the Convention concerning all credentials which have been questioned, or appear to them to be of doubtful validity.

Art. 3. (The Committee shall continue in office until their successors are appointed). *The Committee on Arrangements shall consist of five members residing in or convenient to the City of Washington, D. C., and appointed by the President.*

CHAPTER IX

Of Meetings

Art. 1. The regular decennial meetings of the Convention shall be held upon the second Tues-

*(abstracted)

day in May every twenty years as provided in the Constitution and the place of meeting shall be in the City of Washington, D. C.

BOOK REVIEWS

The History of Nursing. By James J. Walsh, M.D., Ph.D. P. J. Kenedy & Sons, New York, N. Y., Publishers.

In this history the author has confined himself almost entirely to the work of the Catholic nursing orders from early time to the present day. One is impressed with the great contribution made by these devout women not only to nursing but to medicine. It was service of the highest order, and Dr. Walsh has presented the subject in an understanding way.

The book will be of interest to both Doctors and Nurses. It should also give the general reader a better understanding of nursing history, for probably no other history of its kind now available would make the same appeal. Illustrations would have added to the interest of those unfamiliar with the history of nursing.

This book will supplement the History which is commonly used in schools of nursing today. If the author intended it for this purpose, one cannot help but wish that an index had been included to facilitate reference reading, since there is a wealth of material in the Introduction and twenty-one chapters.

Clinical Laboratory Methods. By Russell Landram Haden, M.A., M.D., Professor of Experimental Medicine, University of Kansas, School of Medicine. The C. V. Mosby Company, Publishers, St. Louis, 1929.

Choice of Laboratory procedures will always be a matter of personal preference. The ones listed here are for the most part accepted and workable methods. The small practical importance of quantitative chemical examination of the urine hardly justifies the space allotted to it. As in the previous edition the Kolmer technic of the Wassermann is retained. This is in accord with the trend toward standardization of this important test. For a book which purports to describe only methods which have "proved both practical and dependable" the elaborate classification of the streptococci given seems unwarranted. The chapter of histological technic is usually omitted from works of this sort. It is too brief to adequately present the subject and the choice of methods might well be questioned. One who is in need of concise and workable descriptions of the technic of clinical laboratory procedures should find this volume useful.

A Study of Masturbation (Second edition), by John F. W. Meagher, M.D., F.A.C.P., published by William Wood and Company, New York, is a book which seems to be a result of the author's reading of many articles and books which treat of masturbation from various points of view. He quotes and emphasizes chiefly psychoanalytic studies and apparently feels that they contribute most of his study. The book adds little to the knowledge of the subject.

Treatment of Fractures, by Lorenz Bohler. (Translated by M. E. Steinberg.) Wilhelm Maudrich, Publisher.

The author describes the treatment and analyses the results in a large number of fractures. Many features of interest in the proper reduction of fractures are emphasized to advantage. The only point susceptible to criticism is that the author may be over-enthusiastic in his use of local anaesthesia for the reduction.

It seems a book for the specialist in traumatic surgery rather than for the general practicioner.

The Principles and Practice of Electrocardiography. By Carl J. Wiggers, M.D. C. V. Mosby Co., Publishers.

This is probably the most authoritative and comprehensive book published on this subject.

Part 1 deals with the principles of the electrocardiograph itself and unless one has a good knowledge of electricity, the first part will be hard to understand. Further, as the author suggests, one should have a good knowledge of the instrument.

Part II contains exceedingly valuable information in that the reasons for various movements of the string are clearly expressed and illustrated.

Part III explains pathological curves for which the electrocardiograph is most useful.

Parts II and III are clearly written and contain fundamental information without which a physician cannot expect to become more that an ordinary technician in electrocardiographic work.

A few pages in Part I devoted to electricity might greatly aid the doctor who is trying to master a very technical subject.

Osteomyelitis and Compound Fractures, by H. Winnett Orr, M.D., C. V. Mosby Company, Publishers.

Dr. Orr, in his book, emphasizes the necessity of rest in the treatment of osteomylitis and in the treatment of compound fractures. Adequate wound treatment is essential but proper fixation and rest with as little disturbance of the wound as possible are equally important. The author demonstrates that infrequent dressing of wounds, thus only disturbing the tissues at long intervals, promotes early healing.

Much may be learned from a careful reading of his book by those interested in the treatment of these two serious conditions. It is a book well worth reading.

MISCELLANEOUS

AN UNAPPRECIATED CAUSE OF CHRONIC BRONCHITIS

Following the bronchographic examination of a large number of patients suffering from so-called chronic bronchitis, evidence of bronchial dilation was found by Alton Ochsner, New Orleans (*Journal A. M. A.*, July 20, 1929), in more than 90 per cent of the cases. He says that cases of chronic bronchitis lasting over a period of months or recurrent attacks of acute bronchitis should be given the advantage of a bronchography. The introduction of iodized oil into the tracheobronchial tree is of distinct therapeutic value not only in those cases of chronic bronchitis and recurrent attacks of acute bronchitis but also in the cases of definite bronchiectasis with large amounts of foul sputum. The method used for introducing the iodized oil into the tracheobronchial tree should be simple; it should not require a great deal of technical skill; it should be easy to carry out, harmless and not unpleasant for the patient. This is best accomplished by the passive technic.

ARSPHENAMINIZED SERUM THERAPY OF CEREBRO-SPINAL SYPHILIS

The Swift-Ellis treatment was employed by Henry S. Blesse, Hot Springs National Park, Ark. (*Journal A. M. A.*, July 20, 1929), in a series of 100 cases without modification. The object of this series was to note the influence of arsphenaminized serum therapy on the spinal fluid Wasserman reaction of patients, suffering from cerebrospinal syphilis, whose spinal fluid Wasserman reaction had not been disturbed by two intensive courses of arsphenamine administered intravenously. The intraspinal treatment was given by administering 0.75 Gm. of neoarsphenamine intravenously, and five minutes later 50 cc. of blood was withdrawn from the patient by the open method of introducing an 18 gage needle into a convenient vein. Blood was then kept at room temperature for one hour to permit clotting, after which the clot was freed from the sides of the tube or container with a platinum wire. It was then placed in the refrigerator for twenty hours, after which 15 cc. of serum was removed by pipet. The serum obtained was then inactivated for thirty minutes in an oil bath at 57 C., after which it was cooled to room temperature. Spinal puncture was then performed with a 20 gage spinal needle, after which the 15 cc. of serum was introduced by the gravity method. Of the 100 patients that received two courses of intraspinal therapy, twenty-eight had negative spinal fluid Wasserman reactions in all dilutions, on completion of all treatment, thirty-four had distinct reduction, there was slight reduction in nineteen, and in the remaining nineteen there was no change. Only nine patients failed to show clinical and symptomatic improvement. The remaining ninety-one patients were distinctly improved. There was not an instance of a severe reaction following or during treatment.



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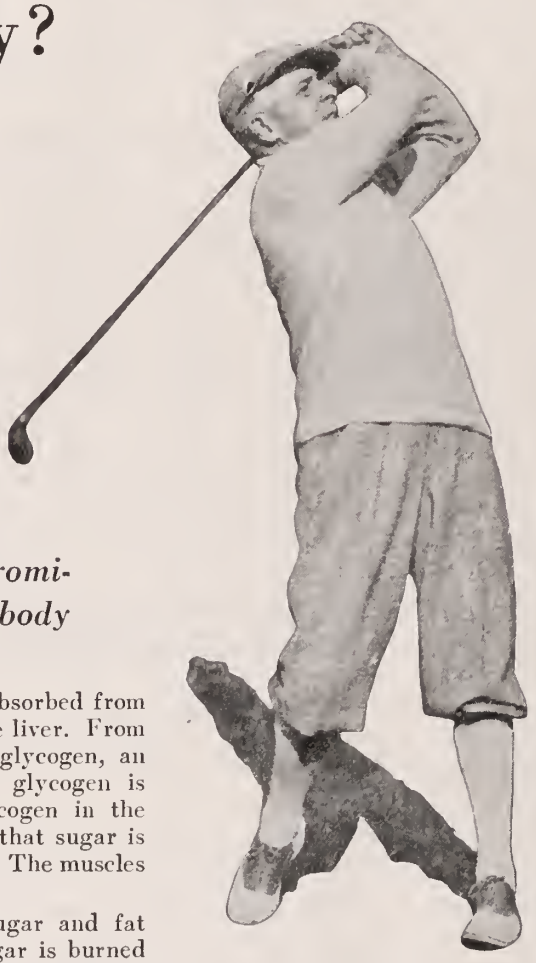
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Meredith F. Campbell, New York (*Journal A. M. A.*, July 20, 1929), presents the results of his study of twenty cases of neurogenic vesical dysfunction in infants and children. In eight of these the urinary tract was studied at autopsy. Chronic pyuria and frequency of urination are the outstanding symptoms in these cases. In the examination of these patients, urinalysis, chemical examination of the blood, renal function tests, abdominal palpation, rectal examination, urography and cystoscopy reveal the nature and extent of the lesion. Treatment is most unsatisfactory, and the attainment of a cure is unlikely. In the majority of advanced cases the most one can do is to recognize the nature of the lesion, inform the parents of the true situation, and offer as much comfort as possible to the patient, bearing in mind that even in the presence of extreme renal destruction he may live for some years if an acute infection does not intervene. In the less severe cases, those manifested clinically by marked enuresis or partial incontinence, the parasympathetic neurofunction of vesical emptying may often be inhibited—partially at least—by atropine. If the nerve lesions are marked however, such drug therapy is of no value.

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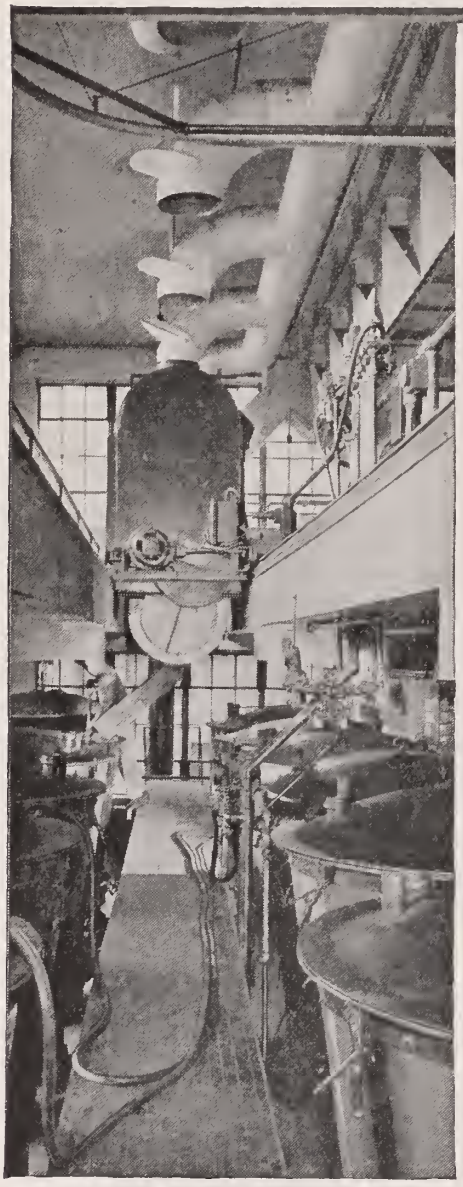
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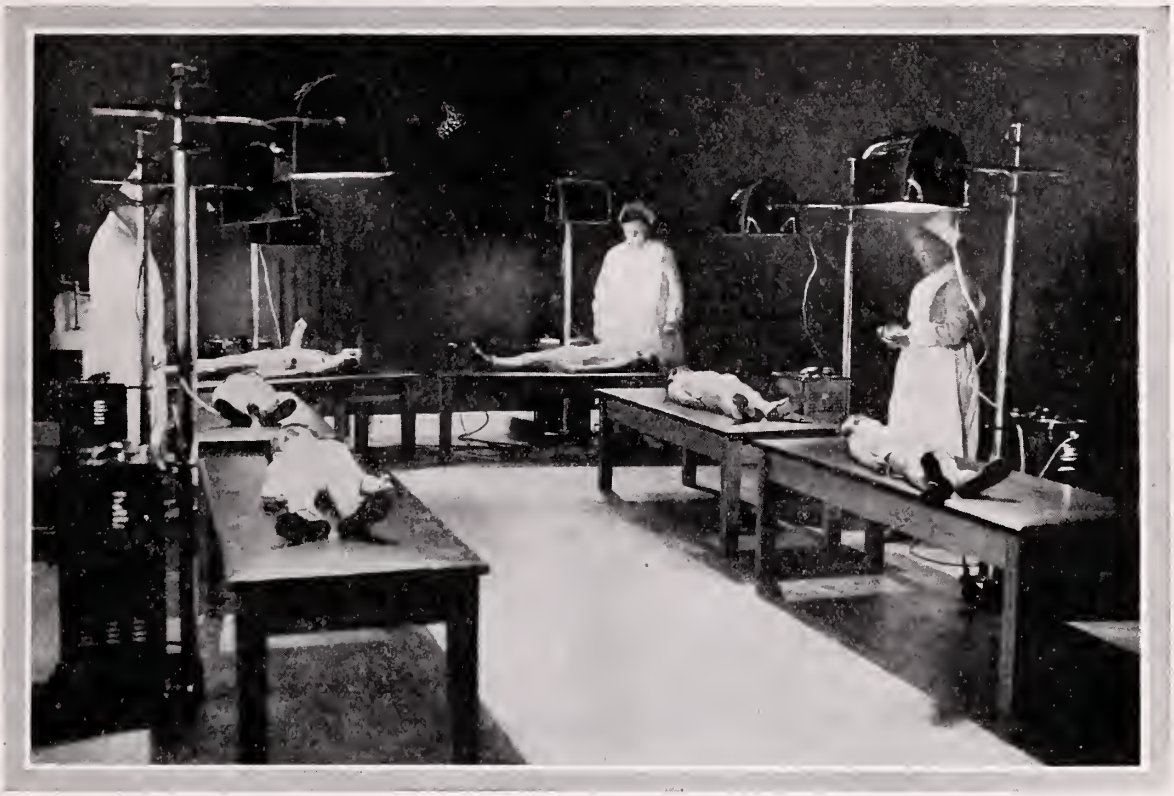


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	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoon Knox Sparkling Gelatine	7	6	....	....	....
¼ cup cold water, 1½ cups hot water	....	....	....	....	....
1 teaspoonful whole mixed spices	....	....	....	....	....
½ teaspoon salt, ⅓ cup vinegar	....	....	....	....	....
½ cup chopped cabbage	50	1	....	3	....
½ cup chopped celery	60	1	....	2	....
¼ cup canned green peas	40	1	....	4	....
¼ cup cooked beets, cubed	40	1	....	3	....
Total		10	....	12	88
One serving		2	....	2	15

Soak gelatine in cold water for five minutes. Bring to boil water, salt and spices. Pour on gelatine to dissolve it and add vinegar. When jelly is nearly set, stir in the vegetables, pour into mold and chill until firm. Unmold on lettuce and serve with salad dressing. Garnish with sprig of parsley or strip of pimento.

JELLIED CHICKEN IN CREAM (*Six Servings*)

	Grams	Prot.	Fat	Carb.	Cal.
1 tablespoonful Knox Gelatine	7	6	....	....	....
¼ cup cold chicken broth or water	....	....	....	....	....
1¼ cups boiling chicken broth, fat free	....	....	....	....	....
½ teaspoon salt	....	....	....	....	....
Pinch pepper	....	....	....	....	....
1 cup cooked chicken, cubed	125	24	20	....	....
¼ cup cream, whipped	55	1	22	1.5	....
Total		31	44	1.5	526
One serving		5	7	....	88

Soak gelatine in cold liquid for five minutes and dissolve in hot broth. Season with salt and pepper and chill until nearly set. Fold in chicken and whipped cream. Turn into molds and chill until firm. Serve on lettuce or garnish with parsley and strip of pimento.

If you agree that recipes like the ones on this page will be helpful in your diabetic practice, write for our complete Diabetic Recipe Book—it contains dozens of valuable recommendations. We shall be glad to mail you as many copies as you desire. Knox Gelatine Laboratories, 436 Knox Ave., Johnstown, N.Y.

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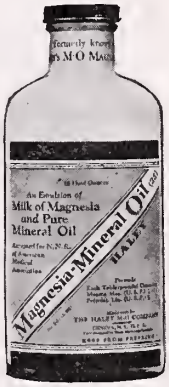
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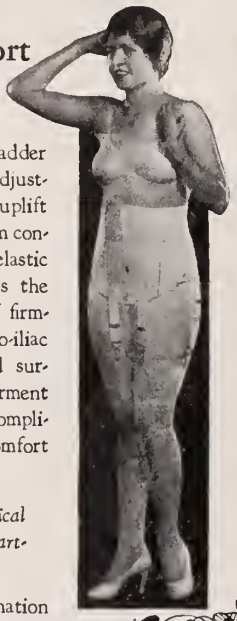


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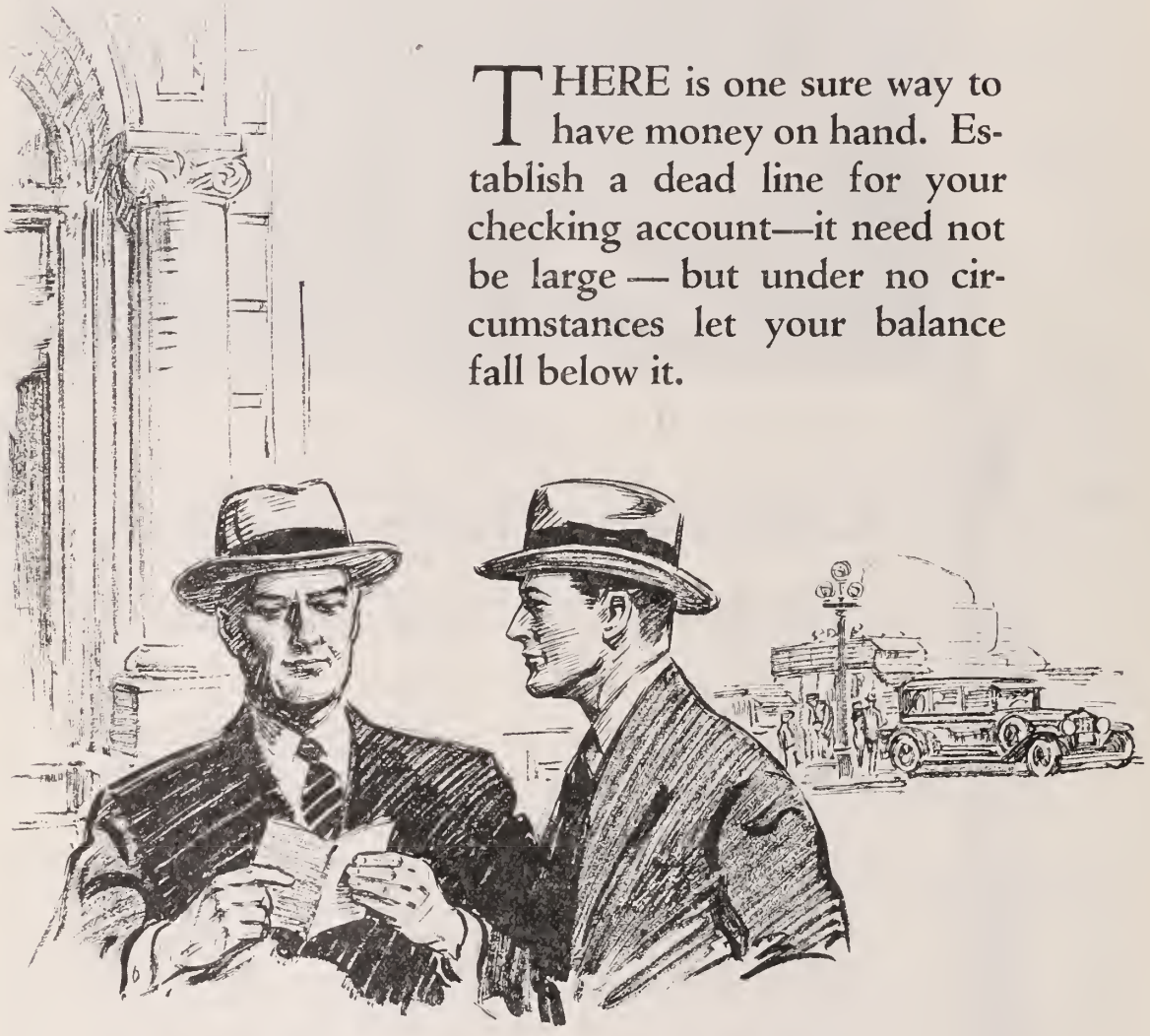
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ORIGINAL ARTICLES

Special Article

THE TREATMENT OF DIABETIC COMA

By

DR. ALEX M. BURGESS

PROVIDENCE, R. I.

Death from diabetic coma is usually preventable. Treatment begun promptly at the patient's home, in spite of the absence of hospital and laboratory facilities, is much more likely to save life than is the most skillful hospital treatment begun three or four hours later. When possible the best plan is to start the treatment at home and then move the patient to the hospital for more careful supervision. No time should be lost in getting in the first dose of insulin as soon as the diagnosis is made.

In view of the fact that many practitioners are unfamiliar with the blood studies and other methods usually used in the hospital in caring for these patients, the following simple statement of the essentials of treatment is presented as an aid to those who find it necessary to deal with this emergency under conditions where facilities for such careful observation are lacking.

1. *Diagnosis:* It is of course of the utmost importance that coma of other origin be not confused with diabetic coma. Coma due to cerebral hemorrhage, uraemia and drugs, such as morphine, can usually be differentiated without difficulty by the physician who is on his guard. Coma due to insulin is frequently mistaken for diabetic coma and, if this occurs, the large dose of insulin which the patient receives may be a source of great danger to him if the error is not promptly detected. The most important point in making the differential diagnosis is that diabetic coma develops *slowly,* and unconsciousness due to insulin, *suddenly.* The diabetic in coma, except in the terminal stage, shows respiration definitely increased both in depth and rapidity, and a dry skin—whereas the respiration of the patient in insulin shock is usually normal and his skin is moist.

2. *Insulin:* This is the remedy *par excellence.* The presence of sufficient insulin and carbohydrates in the tissues means that no more B-oxybutyric acid will be formed and that the state of acidosis which is causing the coma will be decreased as the existing acid bodies are eliminated. One should therefore give a rather large dose of insulin, twenty to thirty units, preferably intravenously and follow this by fifteen units subcutaneously every hour for three or four doses.

3. *Carbohydrates:* If facilities are lacking for making blood tests one should give carbohydrates in some form about thirty minutes after each dose of insulin if the patient can swallow and retain them by mouth. Ginger ale and orange juice both represent approximately ten per cent sugar solutions and four ounces may well be used after each dose of insulin. It is well not to hurry in the administration of these liquids but to give them gradually during the time that remains before the next dose of insulin is due. Although it is perfectly true that the diabetic in coma usually has an excess of blood sugar it is also true that by using carbohydrates in the manner described in connection with relatively large doses of insulin the blood sugar is reduced gradually rather than suddenly, and the possibility of inducing "insulin shock" is eliminated. After three or four doses the insulin may be given at three or four hourly intervals. The urine should be tested every four hours if possible and, if necessary, should be obtained by catheterization. If it is found to be sugar free the following dose of insulin should be reduced to five units and the carbohydrate administration continued, and this should be kept up until a positive test is again obtained in the urine when the use of the original dose should be resumed. This plan should be continued, using full doses of fifteen units of insulin when the urine has been found positive and five units when it has been found negative and keeping up the carbohydrate intake as above described, until the patient has been out

of coma for at least twenty-four hours. In case the patient cannot take carbohydrates by mouth dextrose may be given by rectum, using ten grams in a dilute solution to take the place of four ounces of ginger ale or orange juice. Occasionally, because the rectal dextrose is not well retained it is necessary to give it intravenously. If this is the case it is convenient to use the prepared ampules of 50% glucose solution which may, if necessary, be given undiluted if given slowly. Carbohydrates should only be given intravenously when other routes fail and usually it is only necessary to give one or two doses in this manner.

4. *Liquids:* It is of the utmost importance to replace the depleted body fluids. By giving plenty of liquids, also, the elimination of the existing acid bodies is greatly favored. A diabetic in coma should receive a minimum of one liter every six hours. It is convenient to give a pint of tap water by rectum every six hours and to administer the rest in small doses by mouth when possible. The subcutaneous administration of salt solution is necessary at times and should be preferred to the intravenous route because of the danger of a sudden cardiac overload.

5. *Other measures:* The best available nursing is of course essential. The rectum had best be emptied at the start by a cleansing enema. If a suspicion of gastric dilatation exists lavage of the stomach may be of great help. Caffeine in 7½ grain doses is advisable where depression of the respiratory and circulatory centers has begun as evidenced by a weakening of the pulse and a cessation of the air hunger. Keeping the patient warm is of the greatest importance and the use of heaters and blankets should be a routine.

6. *After care:* When the patient has been conscious for at least twenty-four hours and is very definitely improved one may begin his transition to a more normal diet. Oatmeal, ½ cup, cooked, with a tablespoonful of milk, is a good substitute for the ginger ale or orange juice at one feeding. Clear broth or weak coffee with two Uneeda biscuits may be substituted at another time and the feedings with the preceding insulin doses may be given at four or five hour intervals. On the following day the diet may well be changed to a regular three meal regime with appropriate insulin dosage. The administration of tap water by rectum may be discontinued as soon after recovery from coma as the patient is able to take fluids freely by mouth and has shown definite improvement in his general condition.

Severe Acidosis and "Threatened Coma." These should be treated exactly as coma is treated except that the large initial dose of insulin is not needed. Insulin and carbohydrates should be given at three or four hourly intervals in the manner already described and the fluid intake should be kept above the minimum requirement mentioned.

Prognosis: Two factors are most important. (1) The duration of the coma before treatment is instituted and (2) the presence or absence of infection. Uncomplicated diabetic coma of short duration clears up usually in a few hours with adequate treatment. If severe infection is present the patient, though he may regain consciousness for a time will often relapse into unconsciousness again and die in spite of treatment.

For sake of convenience there are stated below the routine orders which might well be followed in treating a case of diabetic coma in the home.

1. Give twenty or thirty units of insulin intravenously.

2. Keep patient warm, using heaters and blankets if necessary.

3. Give cleansing enema.

4. One hour after first dose of insulin give 15 units subcutaneously and repeat in two hours. After second dose repeat every three hours.

5. Half hour after each dose of insulin give approximately 10 grams of dextrose in the form of orange juice or ginger ale, 4 oz. by mouth, or if necessary give as 200 cc. of 5% glucose by rectum.

Note: If carbohydrates cannot be administered successfully by either of these routes give 20 grams of dextrose intravenously and repeat if necessary in four hours.

6. Give water in small doses every 15 minutes by mouth and give 1 pint of tap water by rectum every six hours. If patient cannot take water by mouth or tends to vomit give 500 cc. of salt solution subpectorally.

7. If the urine becomes sugar free reduce the following dose of insulin to 5 units and continue this dosage until a positive test is obtained. When test becomes positive resume the original dose of 15 units.

8. When the patient is conscious lengthen the interval between insulin doses to four hours and continue for at least twenty-four hours.

9. Give caffeine in adequate dosage (e. g. gr. viiss) if a circulatory failure seems imminent.

THE INJECTION TREATMENT OF VARICOSE VEINS*

CECIL C. DUSTIN, M.D.

PROVIDENCE, R. I.

The injection treatment of varicose veins has passed the experimental stage, and is unquestionably the best method, yet devised, for this rather common, and decidedly disabling condition. The earliest references date back to 1851. Unfortunately, the early technique and solutions used resulted in the methods being eventually condemned by the French Societies in 1894. Since 1911, European workers have reported several thousand successful cases, and, particularly since the World War, the method has been accepted in practically all the Continental countries. Within five years there have been an increasing number of reports in the British and American Medical Journals. It is very interesting in reviewing this literature, to note that usually the severest criticisms, and skeptical comments come from those who have had little experience with the injection method. At present, there has been reported well over 50,000 cases treated by this method, and an analysis of the literature by McPheeters and Rice[1] shows only seven deaths in these series. Of these seven deaths, probably only two occurred in cases in which the proper technique was observed. This gives a mortality rate of .0024, as against the generally accepted figure of .7, mortality rate in operative procedures for the treatment of varicose veins.

In this country McPheeters and Rice in Minneapolis, and DeTakats[2], Chicago, have done a great deal in stimulating interest, and giving this form of treatment its proper standing among the accepted therapeutic measures. Kilbourne[3], in a recent article, the result of a careful survey, pointed out that this method is not only safe, but it is effective. He found the mortality in the United States, following surgical excision, to be one in 250 cases. The mortality by injection is less than one in 4000. Recurrences after operation average thirty per cent, and after injection six per cent. It is noted that the mortality rate following operative procedure in this country is less than that generally reported from the European countries.

The aim of this treatment is to obliterate the lumen of the veins, and, when successful, the vein is completely destroyed, and is not capable of recanalization. The chemical irritant destroys the intema of the vein, very frequently causes a contraction of the muscular coat, with a diminution, of course, in the size of the lumen, and the formation of a primary thrombus, which is very rapidly invaded by fibroblasts. The end result is a connective tissue cord in place of the previously diseased vein. French[4] and American[1,2] investigators have proven, by microscopical examination, that the organization of the primary thrombus following injection is very much more rapid and active than the organization of a thrombus forming in the vein in which the intema is still intact. This fact, unquestionably, accounts for the extreme rarity of pulmonary embolism as a complication in this treatment.

As yet, no ideal solution has been devised. European clinics use largely sodium salicylate, in strengths varying from 20 to 50%, sometimes combined with sodium chloride solution, of varying strength. Glucose and a combination of invert sugars, in strengths of 30 to 50% are extensively used in certain of the American clinics. Quinine hydrochloride and urethane solutions have been used, particularly in obliterating the smaller varices. An ideal solution would be one which is not toxic in the amounts required, and yet is sufficiently irritating to accomplish the desired effect, and it must not cause coagulation of the blood. Its injection should be as free of pain as possible. Any of the previously mentioned solutions can be used, and the solution used must vary somewhat with the individual case. The salicylate and sodium chloride solutions are very effective, but they are also rather prone to cause cramping in the extremeties for several minutes after the injection. The glucose and sugar solutions are not apt to cause pain, and they are less effective in accomplishing the desired results. In my experience urethane

*Read before the Providence Medical Association May 6th, 1929.

and quinine hydrochloride solutions are practically painless, but there are individuals who are susceptible to quinine, even in therapeutic doses, such as in one instance a woman who menstruated for 24 hours following each injection of this solution. Glucose has the advantage of being much less irritating, if, by accident, it is allowed to infiltrate the tissue surrounding the vein. The salicylate and sodium chloride solution, in the strengths used, will cause sloughing if they are introduced into the perivenous tissue. The quinine solutions are also very irritating, and are capable of causing sloughs. It would appear that, in unskilled hands, glucose is the better solution, and, unquestionably, even with skilled operators, in a large series of cases there are bound to be a few instances in which solutions are introduced into the tissue outside the vein. I feel that at present, generally speaking, the glucose is the safest solution to use, although I do not hesitate to use salicylate or quinine whenever I feel that it will better accomplish the desired results.

Before treatment, the patient should be examined, with respect to heart and kidney complications, and the extremeties should be examined to determine the extent and nature of the varicosities present. Tests should be used to determine the patency of the valves in the deep and superficial veins. In cases in which the deep and communicating veins are involved, with loss of patency of the valves, the treatment must proceed with a greater degree of caution than in the case where only the superficial veins are involved. Apparently mild degrees of heart and kidney disease are not contraindications, and some of the experienced men feel that even pregnancy is not to be considered a contraindication. Any case in which a previous deep thrombophlebitis has existed is probably not suitable for this form of treatment, because, in these cases, the varicosities are the result of a diseased condition in the deeper veins, and are apt to be the only patent veins left in the diseased extremity. In cases with infected varicose ulcers the treatment is not contraindicated, but greater care must be exercised, as unpleasant complications in these cases are more common.

The technique of injection requires some experience and skill, because many times the varicose vein, in spite of its enlargement, is more difficult to successfully puncture than is the normal vein. The position of the limb should be such as to cause a certain amount of distension of the vein, so that the needle may be more easily introduced, but the position should not be such as to increase the venous pressure to a point where the injected solution may leak back through the puncture wound. I find that, on the average, with the extremity at an angle of 45 degrees, the veins are usually quite easy to puncture. The veins may be blocked by pressure above and below the point of injection, or the solution may be introduced at a point low down on the extremity, without pressure on the vein above. If the varicosities are extensive and tests show a possible downward flow in the superficial veins, a point high up is more suitable for the first injection. If, in a vein with a reversed blood flow, an injection is made low down, the solution may cause an undesirable destruction of communicating or deep veins. If the vein is blocked, a smaller amount of solution can be used successfully; and the extent of the destruction is much more easily controlled than when large quantities of solution are introduced, allowing destruction to extend as far as it will go. At best it is difficult to estimate the amount of vein which will be destroyed by any single injection. I have seen a primary thrombosis occur in the saphenous vein from just above the internal malleolus to the saphenous opening, after the injection of only 3cc. of 35% sodium salicylate, and this in a vein which was easily over 1cm. in diameter.

It can readily be seen that the amount of destruction will depend largely upon the dilution of the solution by the blood, and by the length of time that the solution is in contact with the intema of the vein. The factors involved in estimating the amount of solution to inject, and the type of solution to use on any particular case, can only be learned by experience.

Patients are not confined to bed during treatment, and, in fact, the men who have had most experience in this type of therapy, advise against immobolization of the legs during treatment, but it is quite important that the injected veins be collapsed by external pressure, immediately after injection, and the pressure should not be removed for several days. I have found the Ace bandage very useful in producing the necessary pressure, and the bandage may be rendered more effective by the use of cotton pads, or pieces of rubber bath

sponge. If the veins are not collapsed by pressure they become filled with a much larger primary thrombus, and the time for complete organization is much longer than when the vein is kept collapsed because necessarily the thrombus in the collapsed vein is very small. Usually several injections are required before satisfactory destruction of all the varicosities is accomplished. In my series of 132 cases the largest number of injections was 26, and the smallest 1, the average being 7 injections. The number of injections, of course, varies a great deal with the extent of the varicosities, and somewhat with the size of the individual vein.

Ulcers practically always heal rather promptly after the destruction of the veins which are responsible for the impaired circulation in the vicinity. It is not always easy, however, to find and obliterate all the varicosities in the neighborhood of the ulcer, particularly where the skin shows thickening and induration, as is often the case in long standing varicose ulcers. The eczemas usually disappear promptly when the veins have been properly treated.

Immediately after injection, and lasting sometimes from 5 to 10 minutes, there may be more or less cramping in the lower leg. The amount of pain varies with different solutions and the average patient does not complain very much. For several days later there will be soreness along the destroyed vein, and a slight amount of edema of the skin below, and over, the point of injection. Usually even when extensive areas have been treated the edema has disappeared at the end of two weeks.

Theoretically, the most feared complication in this treatment should be pulmonary embolism. However, as I have already indicated, the number of accidents of this nature in over 50,000 cases is exceedingly small. The slough and discomfort from introducing solutions outside the veins is probably the most common complication. The normal reaction and soreness along the course of an injected vein can hardly be considered as a complication. Sepsis must always be guarded against, and particular care must be taken in cases where active ulcers are present, or where there is any suggestion of an existing thrombophlebitis.

This therapeutic measure is safe, efficient, and not expensive. It deserves more general use, and offers us a means of reducing economic loss, and personal discomfort.

199 Thayer St.

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ACTIVITIES OF THE STATE BOARD OF HEALTH OF RHODE ISLAND

The Board was created in 1878, one of the first of the kind to be established. It has been given much authority in the matter of controlling disease and in applying the best means for prevention of the same. The Board consists of seven members, one appointed each year by the Governor and approved by the Senate.

The work of the Board is carried on by six Divisions. The Commissioner of Public Health has general supervision over the Divisions, is also State Registrar of Vital Statistics and Secretary of the Board of Registration in Medicine. He prepares annual reports, keeps in close touch with all local Health Officers, with other State Health Departments, and with the United States Public Health Service. From his office antitoxin is distributed free throughout the state.

Laboratories

The Board began to make bacteriological examinations for physicians in 1894, the first in the United States to do this work. It has constantly and increasingly extended its work. Examinations are here made of cultures and tissue specimens submitted by physicians. Over one thousand of the latter per year are now examined. Only a few state laboratories render this aid to physicians. Determinations are made in the case of typhoid fever, tuberculosis, diphtheria, malaria and venereal diseases; also blood examinations, human milk, spinal fluids, and animal brains for rabies, and just at present the new disease of undulant fever. Much work is also done for veterinarians,

and a Department of Toxicology has recently been established. This will save much money that has been spent in the past outside of the state.

A recent inquiry has shown that Rhode Island exceeds in the amount and variety of laboratory service most of the states in the Union, and unlike the usual custom, the work is done without payment of fees.

All drinking water supplies are examined frequently and reports made on the character of the water. Any suspicion of contamination is reported to the local authorities and recommendations made in regard to the treatment necessary. As proof that this work has been well done, we need only to point to the fact that typhoid fever has been reduced almost to the vanishing point. Rhode Island held the record among the states in this country for lowest mortality of this disease per hundred thousand population during three years. It was in 1921, 2.8; 1922, 1.3; 1923, 1.1. It lost its best record among the states by a slight margin in a few instances during the next three years, but in 1927 its record was 0.4. Public health records in this country, in any state, or in any foreign country will be searched in vain for a typhoid record so favorable as this. This is not due to accident, but mainly because of the State Board of Health's supervision over drinking water supplies. The examination of sewage from all parts of the state is made in the laboratory of the Board.

Contagious Diseases

It is very fortunate that the Commissioner has been able to secure the passage of reasonable amendments to the vaccination law. Smallpox, therefore, is almost unknown in this state, and our present law has been accepted as a model by several states during the past two years.

The work of controlling venereal disease, under the Directorship of Dr. Kerney, has been most gratifying. Six well conducted clinics are operated in the state. The work is very important. To indicate how efficient it is, I note in the last report that the Director in his follow-up work has investigated two hundred and seventy-nine cases, all dangerous centers of infection, and secured control and treatment in 92.8% of this number. Local police departments and the state police are rendering valuable assistance in co-operating with Dr. Kerney. Prisoners held in our penal institutions affected with these diseases are required, due to a statute written by the Health Commissioner, to remain, regardless of term of sentence, until they are no longer a menace to the public.

Tuberculosis has shown a decrease in mortality since 1919 of just one-half. Ten years ago the death rate per one hundred thousand was one hundred and forty; in 1928 it was seventy.

Diphtheria, which has been a matter of special concern, has fallen off about 68% since the Board inaugurated its campaign of preventing diphtheria among school children. The Rhode Island State Board of Health was one of the first to do this work, and of about seventy-five thousand children, having been thus treated, no child in the state has died or been sick from this disease. This is a record that cannot be duplicated in this country, and no state has as large a percentage of immune children as Rhode Island. We first began this work in Westerly, and no town in this country of equal population has so favorable a record. No death from diphtheria has occurred in Westerly for about seven years. During many recent years we have had the lowest mortality of any state in the country. This work has been helpful, not only in saving the lives of children, but also as a matter of economy.

Child Welfare

No branch of the Board's work has been more gratifying than that conducted by the Child Welfare Division, which was established in 1919. By its "home visits service" advice and helpful suggestions were given for the care of fifty-eight thousand children under five years of age last year. Prenatal advice was given to some fourteen hundred expectant mothers, and fourteen hundred and seventy new homes were visited.

The midwife problem has been greatly improved. The older and inefficient have not received licenses, and those remaining are under constant supervision of the Board's nurses.

A report of the Children's Bureau in Washington under date of last December indicates that Rhode Island has the lowest rural maternal death rate in this country—twenty-one per ten thousand live births. The average for all states in the registration area according to this report is 55.4.

The effect on child life in this state by the work of the Board is commented on in the report of Miss Grace Abbott, Chief of the Children's Bu-

reau, as follows: "The program is reflected in the decline of infant mortality rate in Rhode Island from the high point of 108 per thousand live births in 1917 to 66 in 1927," and again in the same report, "The greatest decline in any of the New England States was in Rhode Island."

All incoming transatlantic passenger boats are met by a representative of the Child Welfare Division, resulting in helpful suggestions and correspondence. Many children unfamiliar with our customs have thus been guided into proper homes, either in this or some other state.

Vital Statistics

The Board has charge of the state's vital statistics, since the change of law advocated by the Board was passed in 1921. A very complete card index system of vital records is kept, which is thoroughly up-to-date.

It is now necessary that physicians must report births within forty-eight hours. This requirement has proven very helpful.

Registration in Medicine

The duties of examining and licensing physicians falls to the Board. Much careful work is required in verifying all statements of medical applicants, securing information as to the standard of the colleges and hospitals in which candidates have been prepared, and especially in conducting cases in court for violation of the medical practice act.

This state has for the past eleven years been included as one of the twelve states holding the highest standard of candidates seeking to be licensed to practice.

New Activities

Last year the duty of the camp and swimming pool licensing and inspection was placed with the Board. This has been important and worth while, as it has guaranteed safety in these places made so much use of by the public.

The new quarters into which the Board has recently moved are ample for its present duties and an anticipated growth.

The Board suggests that its annual report for 1928, just off the press, be studied carefully. Its annual vital statistics reports indicate that human life in this state has been gradually increased. It is now about nine years more than it was ten years ago. The Board has preferred to inform the public of its duties and accomplishments by these reports rather than by sensational newspaper write-ups.

Respectfully,

Byron U. Richards, M.D.

LABORATORY-ENDORSED THERAPEUTIC AGENTS

W. H. Manwaring and A. P. Krueger, Stanford University, Calif. (*Journal A. M. A.*, July 13, 1929), assert that three decades of clinical experience with laboratory-endorsed vaccines and antiserums give ample data from which to calculate the probability coefficient for this class of therapeutic agents. Hundreds of theoretically logical, laboratory-endorsed vaccines and antiserums have been tried by clinicians; 95 per cent of them have been thrown into the clinical discard. An impartial mathematician would conclude from this that fundamental immunologic theories and current experimental laboratory methods assay less than 5 per cent clinically verifiable truth. He would unhesitatingly predict that, of twenty theoretically logical, laboratory-endorsed vaccines and antiserums, only one would prove a clinical success. It would be more difficult for a mathematician to make an equally reliable calculation for laboratory-endorsed agents in collateral fields of applied immunology; for example, the current laboratory-endorsed bacteriophage. Previous experience with biologic antiseptics of this class has been too meager for more than an approximate estimate. He would be forced to base his approximation on two or three imperfect parallels, with serum bacteriolysin and leukocytic extracts as the closest historical examples. If forced to make an approximate calculation from available historical data, a statistician would probably take the average of the demonstrated clinical zero for leukocytic extract, the 1 per cent clinical value of serum bacteriolysin and the maximum immunologic efficiency, 5 per cent. This average is 2 per cent. A liberal approximation would be 3 per cent, which is surely a therapeutic gamble, with the odds at least 30 to 1 against clinical success.

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FREDERICK N. BROWN, M.D., *Editor*
309 Olney Street, Providence, R. I.

CREIGHTON W. SKELTON, M.D., *Business Manager*
166 Broad Street, Providence, R. I.

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EDITORIALS

THE "HICK" TEST

This may be described as a test of the patient upon the physician and merits a brief discussion. The Hick has been described many times in both poetry and prose. His attire, mental attitude, contemplative manner and characteristic speech are well known and need no description. He may at rare intervals be drawn on the grand jury or consult a physician. Fifty years ago the term farmer was used in opprobrium and commiseration, now one would curry favor with these stalwart and upstanding sons of toil and envy their bank accounts.

Any busy consultant can offer a large number of instances and illustrations of the fact that despite the high standard of work done by most physicians, many patients consult them who have not had the most cursory physical examination. We respectfully submit that it takes but a few minutes to look into the throat, observe the chest, palpate the abdomen and pursue any simple test which the patient's story shows to be needed. In a life insurance examination requiring forty minutes, 80% of the time is spent in taking the applicant's story. Unless some such examination as this is conducted it is the physician who is the "hick" and

reacts to a 100% positive Hick test. We venture further to suggest that if the usual simple tests are performed in each case that there will be less need for the so called "group practice" for the doctor can then send his patient to that specialist who can satisfy his mind upon doubtful points. It may be stated with positiveness that quite a few of the laboratory tests occasionally performed are of only suggestive diagnostic value and not determinate and satisfy only a part of the diagnostic doubt in the case. The physical examination together with brief notes is the thing, furthermore with this examination comes the revelation of the patient's needs and the necessity of further medical care and the more complete fulfilment of the physician's usefulness. With the auscultation of the cough comes the need of further observation. With the examination of the rectum comes the need of a slight operation which may advance the patient well upon the road to health and comfort. With the auscultation of the abdomen may come the discovery of intestinal flatus or hyperperistalsis, suggestive of chronic disease and the urinalysis may give reasons for an elaborate complex and allow the application of a medicinal and hygenic regime which may prolong life and increase usefulness. It must be said that unless we are thorough in our methods and complete in our examinations some of the caustic criticism of our profession appearing from time to time in the lay press will prove to be more or less well founded and incidentally we have never seen any physician who does good work and is thorough in his examinations forsaken or his seed begging bread.

THE PREVENTION OF DEATH FROM DIABETIC COMA

For many years after the introduction of diphtheria antitoxin there were a considerable number of practitioners who either "didn't believe in serums" or were not sufficiently familiar with the use of the new agent to apply it. As a result many lives were lost. At the present time it is to be feared that a somewhat similar situation exists regarding diabetic coma and insulin. Death from uncomplicated diabetic coma, as from diphtheria, is absolutely preventable providing the diagnosis is made reasonably early and the appropriate treatment correctly applied.

In view of the fact that many practitioners at the present time have found it impossible to become sufficiently familiar with the modern treatment of diabetes, the JOURNAL publishes in this issue a special article by Dr. A. M. Burgess on "The Treatment of Diabetic Coma." In this it is attempted to state the essentials of treatment in a practical way that will help the doctor who finds himself confronted with this emergency to face the issue with confidence and give his patient the benefit of effective aid that usually results in a spectacular relief of his symptoms.

A QUESTION IN MEDICAL ETHICS

Medical ethics considers primarily the welfare of the patient. Regardless of his financial condition, he should receive not only the average medical skill to which he is legally entitled but the best medical service available. If he requires a specialist the best available specialist should be chosen. Where the practice known as fee-splitting is in operation, the patient receives not the best medical treatment available but the service which pays the largest commission to the one who is influential in bringing the patient to treatment.

In this community, direct fee-splitting is so rarely encountered that one who has been in active practice for many years may never have had a single instance brought to his attention. But the practice of allowing the physician who has referred the patient to the surgeon to assist at the operation and prescribe the after treatment in order that he may collect a considerable fee for this work may be more reprehensible from the standpoint of medical ethics than the practice of direct fee-splitting. The services of the untrained, occasional surgical assistant or anesthetist are often worse than valueless. Better for the surgeon to worry along unassisted than to subject his patient to the danger of infection trailing the assistant who is unaccustomed to operating room technic. The untrained anesthetist subjects the patient to even greater immediate danger and post-operative discomfort. May not this indirect method of paying a commission to the one who refers the patient be more disastrous than direct fee-splitting?

CASE REPORTS

RHODE ISLAND HOSPITAL

CLINICAL-PATHOLOGIC CONFERENCE

Case reported by Dr. C. Cooke.

P. C.

Age: 60. Male, white, married.

Admitted:

January 6, 1929.

C. C.

Frequency and painful micturition, duration 3 months.

P. I.

Onset three months ago with frequent micturition. After three weeks this became painful and the urine was red. Treated with pills by several doctors without relief. Fainted in church, had temperature of 104. Went to doctor who said he had a hypertrophied prostate. Sent into Rhode Island Hospital.

F. H.

No bearing on this case.

P. H.

No operations, no accidents nor serious illness. G. C. infection at 20 years of age. Good appetite up until three weeks ago. Bowels regular up until last month. Since that time rectum feels different when he defecates. Stools brown, never black or bloody.

Rectal Exam. Prostate enlarged, but soft.

Reflexes Active and equal. Blood pressure 120/65.

Rectal Exam.

Prostate enlarged, but soft.

Reflexes

Active and equal. Blood pressure 120/65.

1/9/29

Flat plates of abdomen, negative. Urine loaded with W. B. C.

1/11/29

Cystoscopy was attempted today. Stricture was encountered and it was impossible to pass cystoscope.

1/22/29

Small amount of blood in rectum. Rectal examination is negative. Bladder irrigated with A. B. solution.

2/9/29

Sounds passed easily, but it was imposible to pass catheter into the bladder.

Operation: Feb. 15, 1929.

5 inch supra pubic incision. Bladder wall approximately ¾" thick. The whole upper portion of the bladder was filled with a cauliflower like growth, which bled easily and gave appearance of being malignant. These areas were cauterized with actual cautery. The whole ant. portion of bladder, including prostatic area, was normal. No. 30 catheter sutured in upper part of bladder for drainage.

Patient did badly, vomited continuously and died 8 days following operation.

Diagnosis: Carcinoma of the bladder, uremia and broncho pneumonia.

Discussion:

Dr. J. W. Keefe opened the discussion. He reviewed briefly cases of diverticulitis which had come under his care. One of these involved the bladder.

Demonstration of Postmortem Material:

There is a great tumor mass within the sigmoid colon which has extended entirely through the gut wall and into the bladder. There is also a perforation into the peritoneal cavity.

Pathologic Diagnosis:

Adeno-carcinoma of sigmoid colon.

Case reported by Dr. J. Sweeney.

M. McW.

Age: 53. Female, white, single.

Admitted:

February 21, 1929.

An emaciated dyspneic unmarried white female of 53 years admitted to Gyn Service on February 21, 1929, complaining of swelling of left leg and abdomen, loss of strength, loss of weight, and dyspnea without exertion. About two and a half years ago patient first noticed a swelling in the midline of abdomen below umbilicus. Pt. too "bashful" to have an examination. This swelling increased in size and she wore corsets to prevent comments about her being pregnant. About the 4th of January this year became dyspneic and in last two weeks could not step up on car step. Loss of weight since soon after onset—best weight 170 lbs., present

weight about 90 lbs. In last year and a half—since July, 1928—the left leg has been swollen intermittently. Throughout entire illness there had been no pain. Appetite ravenous throughout. For 2 weeks before admission all symptoms have increased. Menopause at 49 years; no flow since.

T. 100.6, pulse 120, respiration 22, B. P. 120/70.

P. E.

Gen. exam. is irrelevant.

The abdomen is entirely filled with a large, smooth mass over which the skin may be moved. A fluid wave is definitely made out. The umbilicus is flattened out and superficial veins are prominent, especially in the upper quadrants. Bowel near costal margin not distended. No tenderness.

Nulliparous vagina. One finger admitted with difficulty. By rectal the cervix is posterior and to the left. Bulging seems to present equally on both sides. Left leg and thigh swollen and pits on pressue.

Wass. negative. 22 mg B. U. U. Blood sugar 80 mg.

Blood type 2.

Blister test 7.1.

Urine negative.

2/25/29

Pt. was operated with a preoperative diagnosis of malignant ovarion cyst. "Median incision. Cyst tense and the size of a 9 months pregnancy was freed up. The liver was found practically all cancerous. Fluid withdrawn through tap 9½ quarts. Specimen of tissue removed and sent to Lab. Wound closed in layers."

Put on D. L. after operation and ran a stormy course until she died on March 3, 1929. Autopsy was granted and done the same day.

Demonstration of Postmortem Material:

There is a great cystic tumor mass filling the lower abdomen. It measures 30 cm. in diameter. In the cyst are three liters of fluid. In the cyst wall are large nodules of solid carcinomatous tissue. There is pressure on the ureters resulting in a marked dilatation of the kidney pelves. The liver weighs 3700 grams. It is filled with large nodules of tumor tissue. The left femoral vein is thrombosed. This has resulted in marked edema of the left leg, thigh and labia.

Pathologic Diagnosis:

Carcinoma of the ovary (cystic).

Metastatic carcinoma of the liver.

Hydronephrosis.

Thrombosis of femoral vein (left).

Case reported by Dr. J. O'Connell.

C. S.

Age: 41. Female, white, married.

Admitted:

April 1, 1929.

C. C.

Pain in R. U. Q. with nausea and vomiting.

P. I.

During past year patient has had intermittent attack of pain in R. U. Q. associated at times with some nausea and gaseousness. Three days ago (Friday morning, March 29th) had attack of pain in R. U. Q., very severe in character and radiating to lower rt. shoulder. Pain was relieved by hypodermic. Following morning vomited and continued to vomit at frequent intervals throughout the day, with, however, very little pain. Felt very good on day before admission. Pain again recurred on morning of admission.

Note: Patient delivered at Lying-In Hospital one month previous to admission. Nursing baby at present time.

P. H.

Appendectomy, two years ago, otherwise no other operations.

Nine pregnancies. One miscarriage. (5th) Normal puerperium always. Catamenia, normal.

M. H.

Husband living and well. 8 children living and well.

F. H.

Irrelevant.

Physical Examination:

The patient is a rather obese Italian woman of 41 years, not in any great discomfort. She is pale, very definitely anemic. There is a faint icteric tint to conjunctivae.

Temperature 100, respiration 20, pulse 96.

Head and thorax: essentially negative.

Abdomen flabby and pendulous. There is a ragged 4" rt. rectus incision with moderately large incisional hernia over this site. A firm

smoothly rounded movable mass about 3″ in diameter can be readily palpated in R. U. Q. through incisional hernia. It is not especially tender.

There is tenderness and moderate muscular rigidity over G. B. region on deep palpation. P. E. otherwise essentially negative.

Course

4/4/29

Patient complains of some pain in right upper quadrant. Nauseated at times, but has not vomited. Vital signs are within normal limits. The mass which on first examination seemed confined to U. R. Q. can easily be moved to opposite side of midline. Manipulation of the mass does not elicit much discomfort. Urine: 3 plus, sugar with acetone. Blood sugar: 111 mg. Patient on diabetic routine (insulin U 5 t. i. d. TD IY).

4/7/29

Patient fairly comfortable. Temp., pulse and respiration within normal limits. W. B. C. 6400. Urine: 1 plus to 3 plus. Acetone and diacetic present. On insulin X t. i. d. diet C_6PF_6.

X-Ray

G. B. is not visualized, suggesting pathological gall bladder.

4/10/29

Repeated G. B. series fail to show G. B. outline.

R. B. C. 3,560,000.

Hgbn. 65%.

W. B. C. 9,400.

Laboratory reports lactosuria. Baby weaned.

4/14/29

R. B. C. 3,770,000.

Hgbn. 65%.

W. B. C. 7,350.

Polys. 65%.

Patient comfortable, diabetes under control.

Operation: April 20, 1929.

At operation a solid mass about the size of a baseball was found in the mesentery of the small intestine about 8 inches below the beginning of the jejunum. The tumor was intimately connected with the intestine necessitating resection of about 10 inches of the jejunum. A lateral anastomosis was done. The gall bladder wall was white and thick. It was empty except for a few small stones. The condition of patient was such that gall bladder operation was considered inadvisable at this time. The patient made an uneventful recovery.

Demonstration of Surgical Specimen:

(Dr. Clarke.)

Gross Description:

The specimen consists of a tumor mass which measures 11 cm. in diameter. Encircling the tumor is a loop of small intestine. On opening the intestine at the point where the tumor evidently arose, the gut is greatly widened and there is ulceration of the mucosa which measures 3½ x 4 cm. The tumor evidently originated in this region and has grown outward into the mesentry. The external surface is covered with smooth mesothelium. On section the tumor appears to be made up largely of smooth muscle.

Microscopical Description:

The tumor has the same histology as is seen in smooth muscle tumors of the uterus. There are interlacing bundles of smooth muscle and fibrous tissue. In the region of the ulcer there is infiltration of inflammatory cells. A short distance from the ulcerated area the gut wall has its normal longitudinal and circular layers of muscle. Nearer the ulcer these coats become lost in the tumor mass so that the tumor comes to lie directly beneath the mucosa and tumor tissue forms the floor of the ulcer.

Diagnosis:

Leiomyoma of intestinal wall.

Many of the patient's symptoms were, no doubt, due to the gall bladder condition, since it was found to contain stones at the time of operation.

OBITUARY

Dennis C. O'Leary

Dennis C. O'Leary died on September the fifth, 1929, in his 55th year. He was born in Worcester, the son of Cornelius and Joanna (Sullivan) O'Leary and when less than a year old the family removed to Providence. After graduating from La Salle Academy he entered Holy Cross College

where he graduated in 1896, receiving his medical degree from Harvard Medical School in 1900. Since that time he practised in Providence until his last illness.

In 1912 he married Mrs. Helen Desmond Crowley of Meriden, Conn., who survives him together with a stepson, Claude D. Crowley, and a cousin, James O'Leary, of Attleboro. He was a member of the Providence Medical Association and was a physician for the Antlers and the New England Order of Protection.

Dr. O'Leary's ability and genial nature soon brought him a large family and industrial practice and seeing the need he soon became familiar with the Portuguese language the better to serve those whose acquaintance with English was as yet limited. And although his busy life left but little time for recreation he particularly enjoyed the Greek Classics which he read with ease, having continued his studies in Greek and Latin since his college days. Dr. O'Leary is mourned by a large following of devoted patients and friends.

Edward Campbell,
John J. Madden,
W. Louis Chapman.

SOCIETIES

Providence Medical Association

The regular monthly meeting of the Providence Medical Association was called to order by the President, Dr. Arthur H. Ruggles, Monday evening, November 4, 1929, at 8:55 o'clock. The records of the last meeting were read and approved. A letter from Mrs. Sartwell in answer to the obituary of Dr. Sartwell was read. An obituary of Dr. Dennis C. O'Leary was read by the secretary, and it was voted that it be spread on the records published in the journal and a copy sent to the family. Dr. Alexander M. Burgess reported that a patient of his had been treated by a Mr. M. J. Morse for nephritis. Dr. Lawson also reported a case of cancer treated by Morse. Dr. Rounds reported that he had the matter under investigation. Dr. Skelton asked questions.

The first paper of the evening was read by Dr. Geo. W. Waterman on Organotherapy in Gynecology. He felt that the value of commercial glandular products had been very small. Laboratory research is now getting definite results whereas clinical use had been absolutely chaotic. Some interesting experiments were quoted where follicular liquid or extracts of human placenta brought on the sex cycle in speyed rats. Dr. Waterman expects marked advances in the near future.

The paper was discussed by Dr. Pitts, Dr. Perkins, Dr. A. T. Jones, Dr. Buxton, Dr. Skelton, and Dr. Waterman.

The second paper by Dr. Gary W. Wells was on The Present Day Interpretation of Basal Metabolism. A standard minimum of activity is necessary before measuring rates of metabolism. Hence patients go without food 14 hours and rest before a test.

Indirect calorimetry does not measure heat but estimates it by the relation of oxygen consumed and carbon dioxide given off. A short description of the technique of the test was given and the variations in different types of individuals. He then discussed the relation of the test to the various types of thyroid disease and also the findings in numerous other diseases.

The paper was discussed by Dr. Wing, Dr. Fulton, Dr. Lawson, Dr. Miller, Dr. Clinton Westcott, Dr. Burgess, Dr. Sanborn, Dr. Streker, Dr. Perkins and Dr. Wells.

The meeting adjourned at 10:50 P. M. Attendance 88.

Respectfully submitted,
Peter Pineo Chase, *Sec'y.*

Rhode Island Medico-Legal Society

The regular quarterly meeting of the Society was held in the Medical Library Building, 106 Francis Street, Providence, on Thursday, October 31, 1929, at 5 P. M.

A paper, "On The Witness Stand," was read by Dr. John D. Adams, an orthopedic surgeon of Boston.

Following adjournment, a light supper was served.

Jacob S. Kelley, M.D., *Sec'y.*

MISCELLANEOUS

ROENTGEN OBSERVATIONS IN MASSIVE ATELECTASIS AND POSTOPERATIVE PNEUMONIA

The roentgen appearance in collapse of the lung will depend on the extent of the collapse and, to some degree, on the etiologic factors, asserts George W. Holmes, Boston (*Journal A. M. A.*, July 13, 1929). The degree of density depends on the completeness of the collapse and the presence or absence of "drowning." The involved area is more dense than the surrounding lung; the heart and mediastinal contents are usually displaced toward the affected side; the diaphragm is high and, in the early stages, there is absence of respiratory excursion; the intercostal spaces are narrow, but the costophrenic sinus is usually not obliterated. When only one lobe is involved the dull area will correspond to the region of the involved lobe, although the area is usually smaller. The lower margin is likely to be sharply defined, the upper rather mottled and indistinct. The displacement of the heart to the affected side is less marked, particularly if the collapse is in the upper lobe. The high, fixed position of the diaphragm is a fairly constant finding in all early cases and is of considerable value in the differentiation of postoperative collapse from collapse due to foreign bodies in the bronchi. In some cases of massive collapse there is probably a considerable amount of fluid in the air passages. In these cases the shadows are more dense, the outline of the diaphragm may be obliterated and the displacement of the heart to the affected side may be considerably less. While it is not proved that this condition follows acute massive collapse, there is considerable evidence that this is a possibility. The shadow caused by chronic complete collapse of the lung is similar to that seen in chronic suppuration and is frequently overlooked or misinterpreted. The roentgen observations in the typical cases are sufficiently distinct to permit of a correct diagnosis if the examiner considers collapse a possibility. The error usually occurs from failure to consider collapse or by overlooking the shadow completely. The signs of importance in the differentiation from lung abscess or bronchiectasis are: the shape of the shadow, which is tonguelike or triangular; its even density with absence of mottling or cavity formation; the sharply defined margins without evidence of inflammatory reaction around them, and the location of the shadow. The lobes usually involved are the lower ones, and the shadows are seen in the angles between the heart and the diaphragm. The postoperative pulmonary complications most likely to be confused with acute massive collapse are pneumonia or infarction. In the interpretation of roentgenograms of the chest it is necessary to keep in mind the effect of respiration, position, tube-film distance, and exposure time on the appearance of the lung fields. In postoperative pulmonary complications it is usually not possible to make fluoroscopic studies, and the roentgen observations are obtained from a series of films. These films are usually taken at the bedside, which necessitates relatively short tube-film distance and a rather long exposure time. The character of films taken under these conditions must be considered in drawing conclusions. A marked change may take place in postoperative collapse if the patient is allowed to cough or change position. This procedure should be tried when possible and roentgenograms taken before and after doing so, as they may help to establish the diagnosis. It is of considerable importance to have roetgenograms taken at stated intervals until the lung returns to normal, as there is some evidence that in a certain percentage of these cases the involved lobe fails to expand and may become airless.

FELONS, ACUTE LYMPHANGITIS AND TENDON SHEATH INFECTIONS

The differential diagnosis of a felon, an acute lymphangitis and a tendon sheath infection Sumner L. Koch, Chicago (*Journal A. M. A.*, April 6, 1929), says depends on definite symptoms and signs which can be readily recognized if they are kept in mind and sought for. To make such a diagnosis is of the utmost importance, for the avoidance of bone destruction in the case of a felon and of tendon necrosis in the case of a tendon sheath infection depends on early incision and drainage. In the treatment of an acute lymphangitis, on the other hand, abstinence from surgical treatment is imperative if one is to avoid the possibility of converting a local infection into a general septicemia.



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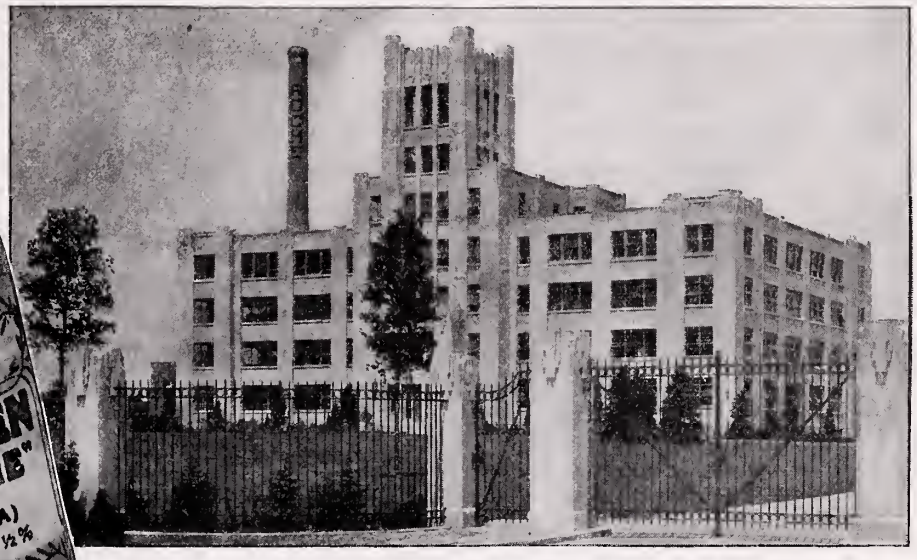
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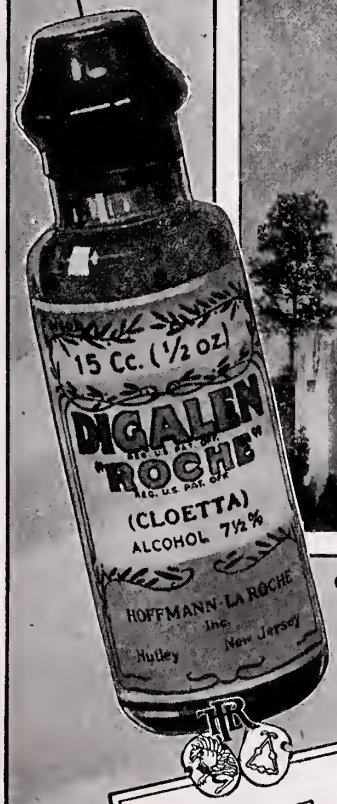
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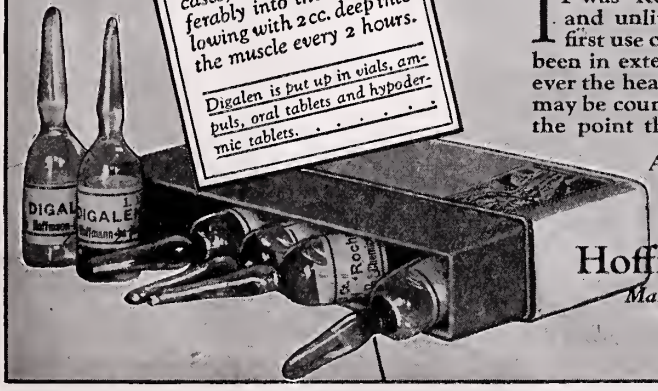
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Greenwood 236-W

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an hour or two of relaxation.

Clergymen, Doctors, Lawyers, Nurses and Business Men,
will enjoy a few hours of relaxation at
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As a General Antiseptic

in place of

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Try

Mercurochrome-220 Soluble

Dibrom-oxymercuri-fluorescein
2% Solution

It stains, it penetrates, and it furnishes a deposit of the germicidal agent in the desired field.

It does not burn, irritate or injure tissue in any way.

Hynson, Westcott & Dunning
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The amino acids, colloidal proteins, known activated enzymes, associated nitrogenous extractives, organic and inorganic cell principles—these are all contained in Gastron.

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